

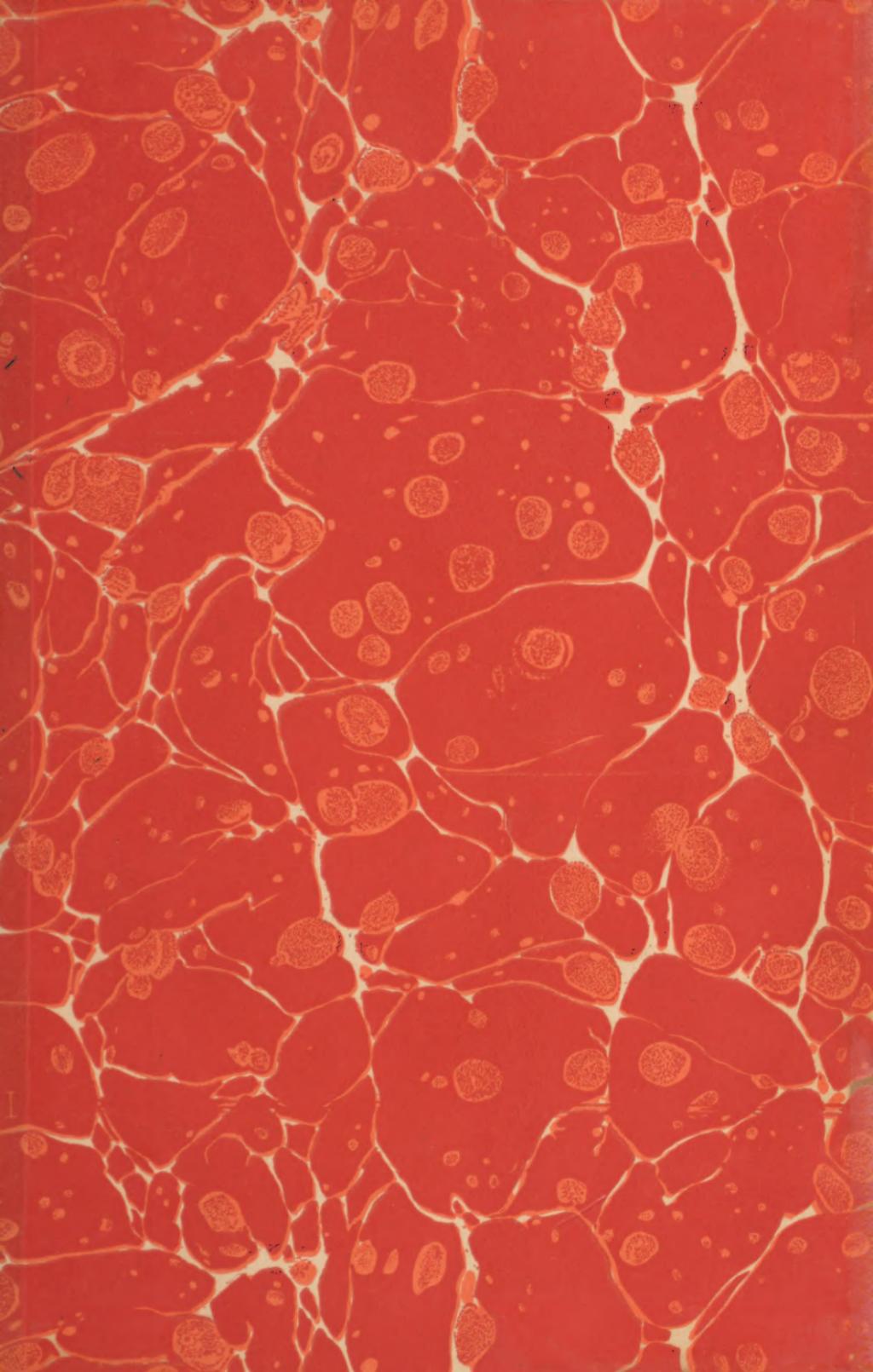
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CASES AND OBSERVATIONS,

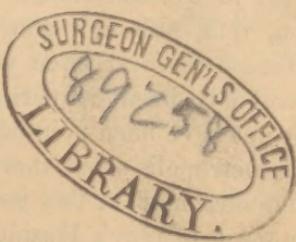
ILLUSTRATIVE OF

RENAL DISEASE

ACCOMPANIED WITH

THE SECRETION OF ALBUMINOUS URINE.

BY DR. BRIGHT.



FROM GUY'S HOSPITAL REPORTS, No. II. VOL. I.

1836.

Mon. Med.

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THE importance and extensive prevalence of that form of disease, which, after it has continued for some time, is attended by the peculiar changes in the structure of the kidney, now pretty generally known by the names of 'mottling,' 'white degeneration,' 'contraction,' or 'granulation,' impresses itself every year more and more deeply on my mind; and whether I turn to the wards of the hospital, or reflect on the experience of private practice, I find, on every side, such examples of its fatal progress and unrelenting ravages, as induce me to consider it amongst the most frequent, as well as the most certain causes of death in some classes of the community, while it is of common occurrence in all; and I believe I speak within bounds, when I state, that not less than five hundred die of it annually in London alone. It is, indeed, an humiliating confession, that, although much attention has been directed to this disease for nearly ten years, and during that time there has probably been no period in which at least twenty cases might not have been pointed out in each of the large hospitals of the metropolis—and there is reason to believe that double that number may, at this moment, and at all times, be found in the wards of Guy's Hospital—yet little or nothing has been done towards devising a method of permanent relief, when the disease has been confirmed; and no fixed plan has been laid down, as affording a tolerable certainty of cure in the more recent cases. I believe that our want of success, in what are considered the more recent attacks, is frequently owing to the fact, that the disease is far more advanced than we suspect,

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when it first becomes the object of our attention: and I am most anxious, in the present communication, to impress upon the members of our profession the insidious nature of this malady, that they may be led to watch its first approaches, with all the solicitude which they would feel on discovering the first suspicious symptoms of phthisis or of epilepsy. There is great reason to suppose that the seeds of this disease are often sown at an early period; and that intervals of apparent health produce a false security in the patient, his friends, and his medical attendants, even where apprehension has been early excited.

The first indications of the tendency to this disease is often haematuria, of a more or less decided character: this may originate from various causes, and yet may give evidence of the same tendency: scarlatina has apparently laid the foundation for the future mischief: exertion in childish plays has done the same; or it has sometimes appeared to be connected with suppressed catamenia. Intemperance seems its most usual source; and exposure to cold the most common cause of its developement and aggravation. It is, however, more particularly to those causes which operate in youth, or are apparently so casual as to tempt us to believe that when the immediate symptoms are subdued no evil can result, that I wish to direct attention. Where intemperance has laid the foundation, the mischief will generally be so deeply rooted before the discovery is made, that, even could we remove the exciting cause, little could be hoped from remedies; but at the same time, a more impressive warning against the intemperate use of ardent spirits cannot be derived from any other form of disease with which we are acquainted; since, most assuredly, by no other do so many individuals fall victims to this vice.

The history of this disease, and its symptoms, is nearly as follows:—

A child, or an adult, is affected with scarlatina, or some other acute disease; or has indulged in the intemperate use of ardent spirits for a series of months or years: he is exposed to some casual cause or habitual source of suppressed perspiration: he finds the secretion of his urine greatly increased, or he discovers that it is tinged with blood; or, without having

made any such observation, he awakes in the morning with his face swollen, or his ankles puffy, or his hands oedematous. If he happen, in this condition, to fall under the care of a practitioner who suspects the nature of his disease, it is found, that already his urine contains a notable quantity of albumen: his pulse is full and hard, his skin dry, he has often headache, and sometimes a sense of weight or pain across the loins. Under treatment more or less active, or sometimes without any treatment, the more obvious and distressing of these symptoms disappear; the swelling, whether casual or constant, is no longer observed; the urine ceases to evince any admixture of red particles; and, according to the degree of importance which has been attached to these symptoms, they are gradually lost sight of, or are absolutely forgotten. Nevertheless, from time to time the countenance becomes bloated; the skin is dry; headaches occur with unusual frequency; or the calls to micturition disturb the night's repose. After a time, the healthy colour of the countenance fades; a sense of weakness or pain in the loins increases; headaches, often accompanied by vomiting, add greatly to the general want of comfort; and a sense of lassitude, of weariness, and of depression, gradually steal over the bodily and mental frame. Again the assistance of medicine is sought. If the nature of the disease is suspected, the urine is carefully tested; and found, in almost every trial, to contain albumen, while the quantity of urea is gradually diminishing. If, in the attempt to give relief to the oppression of the system, blood is drawn, it is often buffed, or the serum is milky and opaque; and nice analysis will frequently detect a great deficiency of albumen, and sometimes manifest indications of the presence of urea. If the disease is not suspected, the liver, the stomach, or the brain divide the care of the practitioner, sometimes drawing him away entirely from the more important seat of disease. The swelling increases and decreases; the mind grows cheerful, or is sad; the secretions of the kidney or the skin are augmented or diminished, sometimes in alternate ratio, sometimes without apparent relation. Again the patient is restored to tolerable health; again he enters on his active duties: or he is perhaps, less fortunate;—the swelling increases, the urine becomes scanty, the powers of life seem to yield, the lungs

become œdematos, and, in a state of asphyxia or coma, he sinks into the grave; or a sudden effusion of serum into the glottis closes the passages of the air, and brings on a more sudden dissolution. Should he, however, have resumed the avocations of life, he is usually subject to constant recurrence of his symptoms; or again, almost dismissing the recollection of his ailment, he is suddenly seized with an acute attack of pericarditis, or with a still more acute attack of peritonitis, which, without any renewed warning, deprives him, in eight and forty hours, of his life. Should he escape this danger likewise, other perils await him; his headaches have been observed to become more frequent; his stomach more deranged; his vision indistinct; his hearing depraved: he is suddenly seized with a convulsive fit, and becomes blind. He struggles through the attack; but again and again it returns; and before a day or a week has elapsed, worn out by convulsions, or overwhelmed by coma, the painful history of his disease is closed.

Of the appearance presented after death, enough will be said in another part of the present communication: but one question may be asked in this place—Do we always find such lesion of the kidney as to bear us out in the belief, that the peculiar condition of the urine, to which I have already referred, shews that the disease, call it what we may, is connected necessarily and essentially with the derangement of that organ? After ten years' attentive—though, perhaps, I must not say completely impartial observation—I am ready to answer this question in the affirmative; and yet I confess that I have occasionally met with anomalies which have been somewhat difficult to explain.

I have certainly seen one or two cases, and have read statements of one or two more, in which the condition of the kidney would have led me to expect albuminous urine, but in which it had not been found to exist. In all these cases, however, the observations on the character of the urine have been made only a few days or weeks before death, at the close of a protracted illness; or the disease of the kidney has been complicated with other very extensive disease. A case occurred under my care, in the Clinical Ward, this winter, where a man died with ascites and a complication of most extensive disease of the liver and peritoneum, with moderately-advanced granulation

of the kidney; yet it was only by the most careful examination that any traces of albumen could be detected in his urine: and this leads me to observe, that the secretion is apt to undergo changes, even after the structural disease is established; which renders it requisite that we should not be content with examining the urine on one or two occasions, if we have any reason to suspect the existence of this disease. In the first place, it is quite certain, that if, from any cause, the urine becomes alkaline, the application of heat generally fails to produce coagulation; and in the next place, there has appeared to me to be an occasional alternation in the secreting power of the kidney; so that a large quantity of the lithates, or of crystallized lithic sand, is deposited, and the albuminous matter is not thrown off. I have this winter had a case of this kind likewise under my care, in a man whose symptoms bear all the character of renal disease, complicated with the disease of other viscera. His urine for several weeks was found to be distinctly albuminous: it then became loaded with the lithates; and now throws down abundant crystals of lithic sand, and no longer affords any trace of albumen: and mentioning this case to Dr. Addison, I was told, that very lately the converse of this had shewn itself in a case to which he had been called. All the symptoms led him to suspect this peculiar form of renal disease; but the urine did not coagulate, and was loaded with lithates. After a short time, the lithates disappeared, and now the albumen is very decidedly perceived in the urine. That such facts as these tend, in some degree, to render the presence of albumen in the urine, or its absence, a less unmerring test, cannot be doubted; but these anomalies are so few, as to interfere very little with the general fact: and after all, in the present state of our knowledge, how few of our diagnostic marks are not more or less under the influence of the casual complications of disease! There is no doubt, likewise, that the morbid condition of the kidneys connected with this disease varies, in different cases, to such a degree as to lead to the belief that the action from which the change has resulted must at least be modified by circumstances and constitutions. The kidney is sometimes simply contracted and hardened; sometimes loaded with an adventitious deposit; sometimes apparently degenerated throughout its whole texture; some-

times affected both with deposit, degeneration, and contraction; all probably the result of chronic excess of action. It is to be expected that modifications should arise in the degree and constancy of the morbid secretion, under such varieties of diseased appearance: but this is not, as yet, satisfactorily known; and I have certainly not always found the quantity of albumen increased in proportion to the apparent advance in the structural disease.

Another very important question is, the length of time which this disease may exist in the constitution, before it runs to its last fatal period: and although our experience in the hospital is great, the point of duration is yet undetermined; for, with all the advantages which an hospital affords for the multiplied accumulation of facts, there are some points on which the information derived in its wards is defective, and even apt to be erroneous; and amongst these may be reckoned one of great importance—the probable duration of life, under any disease. If a case is much relieved, the hospital physician loses sight of it, and in all probability sees it no more; knowing nothing of future relapses, or of the ultimate result. On the other hand, a very large proportion of his cases are arrived at the most advanced stages of the respective disorders: the circumstances of the patients have been such, as to render them inattentive to the earlier indications of disease; and it is only when they can no longer pursue their laborious occupations, that they are driven, too late, to seek relief. Hence the physician is liable to form a wrong estimate of the progress of the disease under more favourable circumstances; and it is necessary to correct his views by a comparison with the history and results of private practice.

There has not yet, perhaps, been sufficient time, since this disease of the kidneys first attracted attention, to say to what extent life may be prolonged while the body is under its influence; but I believe, with care, its fatal effects may be kept at bay, and a hazardous life may be protracted for many years. Should that care be neglected, the chance of life will be greatly diminished.

The cases which I now offer will be found to bear upon many points in the history I have just sketched out; and, amongst others, will tend to illustrate the subject of the pro-

bable duration of the disease, and some of the more insidious attacks which attend the fatal termination.

CASE 1.—*Albuminous Urine—Death from Apoplexy, after the disease had existed at least four years.*

IN the month of March 1832, a physician, aged about 42, who had always lived freely, but not intemperately, applied to me, labouring under all the marked symptoms attendant upon the secretion of albuminous urine; his flesh wasting; his strength failing; his legs swollen. It appeared, that for nearly two years these and other symptoms had existed, and he had been treated by different medical men as labouring under diabetes, and under disease of the heart, and various other disorders. The urine was albuminous in the highest degree. I put him on the use of the decoction of the pyrola umbellata; and, after ten days, I added to this two grains of salicine, three times a day; and ordered him to employ a milk diet. He took milk and water for breakfast; a good ordinary dinner, with two glasses of port-wine and water; and milk and water again for tea. After he had continued this treatment for about six weeks, under the watchful care of his friend Mr. Chapman of Tooting, I received a letter from him, on the 28th of April, informing me of his intention to go to North America; where he had formerly spent many years, and where he thought he enjoyed better health than in England. To this letter he added: “I am happy to say that your prescription has produced a favourable change; and, by persevering in the same treatment and diet, I may perhaps recover completely. My legs have gone down, and the thirst has diminished; and altogether I find myself better. The urine still contains a great quantity of albumen, but the secretion is not so great. The only unfavourable symptoms are, want of sleep; and no increase of substance, but rather the contrary, for I think I am thinner than I was: however, I live in hope.”

October 24, 1833: he entered my study, looking robust and strong, and in apparent health. He told me that he had spent above a year in Canada and North America, and had returned to England about three months ago: that, from the time of his leaving England, he had found his health improve;

and when he returned, he appeared to be quite well. However, some of his symptoms had again shewn themselves, since his return: his legs began to swell, so that he was obliged always to wear bandages: his hands also swelled occasionally: he had great inability to sleep at night: suffered from vertigo: his urine was coagulable by heat, though it emitted a urinous smell: appetite good: tongue clean: pulse from 80 to 90: skin freely perspirable. He kept his bowels regular, by pills. He remained in tolerable health; but was always excessively low-spirited, and suffered much from headache: he had constantly a slight tendency to anasarca, and his urine was always albuminous.

In the latter part of the summer of 1834, he again resolved, at all hazards, to try the effect of revisiting America; and he seemed, to a certain degree, recruited by the voyage. But in the latter end of November, having exposed himself a good deal in shooting, he was attacked with hemiplegia; and in three weeks after, died apoplectic, on the 15th of December.

In this case, it does not appear what was the precise cause to which the disorder of the urinary secretion owed its origin. Its existence is plainly traced, through a period exceeding four years; during which time the patient seems never to have enjoyed any thing approaching to a perfect state of health, though there were times when the symptoms had ceased to be recognised by ordinary observers. Mild remedies, and diet, certainly did him temporary good; but the faulty secretion of the kidneys remained, and very little inattention was sufficient to bring on that crisis in which he died. It is observable, that the skin was generally in a perspirable state; and perhaps to this was owing the protracted character of the disease.

CASE 2.—Albuminous Urine—Death with Convulsion and Coma, after the disease had probably existed eight years—Kidneys granulated.

In the month of July 1835, a medical gentleman from the country, aged 33, came to consult me with regard to his general health. His countenance was somewhat pallid; otherwise, his looks did not bespeak material disease. He told me that his health had been good till about the age of twenty;

when he began to complain of occasional dyspepsia, from which he had continued to suffer, and which had latterly increased. In the year 1826, he had the ulcerated sore-throat of scarlatina, but no rash; and seemed to have taken the complaint from attendance on patients affected with it. He was, at that time, very seriously ill; and his urine was observed to be deep-coloured, like coffee. This however soon ceased; but the urine had generally been of a light colour, abundant, and often inclined to froth, and, he believed, had always been albuminous since that time. It had nevertheless on two occasions, first in 1833, and next in February 1835, put on the same dark appearance as in the year 1826.

Six years ago he began to suffer from occasional pain in the back and region of the kidneys, rather more on the left than the right side; and he had wandering pains about the heart, which were considered to be neuralgic. The latter symptoms subsided, but the dull pain in the back continued; and he had since been subject to puffy œdematosus swelling of the face, legs, and ankles. Four years ago he had an attack of catarrhal inflammation of the chest, which appeared to have rendered him very susceptible of atmospheric changes; and about a year and a half ago he wasted considerably. He had suffered, for the last fifteen years, from severe attacks of sick headache, with vomiting, which continued for several hours; and this had increased during the last few months. The fluid which was ejected from his stomach was excessively acid, and sometimes tinged with bile: the bowels were habitually costive. I understood that he has been temperate as regards drink, but irregular in his meals. I examined his urine carefully, found it of a light straw colour, very acid, and throwing down numerous flocculi of albumen by the application of a moderate degree of heat. He evidently saw that I considered his case one of a most serious character; and he consented to do any thing I would direct, consistently with his continuing to practise his profession. I enjoined upon him the greatest care in avoiding exposure to cold and chills; told him to clothe himself completely in flannel; to keep strictly to a milk diet; and to regulate his bowels with scammony or some simple purgative; and I prescribed powders of the *uva ursi*, soda, and compound ipecacuanha powder, to be taken thrice a day.

I saw him on the 1st of October following, improved in appearance, and, as he said, greatly improved in his power of exertion and in his general feelings; but the urine still coagulable. He ascribed this favourable alteration entirely to a most rigid adherence to the milk diet, and the occasional use of seammony to regulate the bowels. He had not continued the powders long.

The next report I obtained of this gentleman was an account of his death, which had taken place on the 27th of November, about eight weeks after I had last seen him apparently so much improved. I learned, that about six weeks before his death he had suffered most severely from headache and vomiting; which was now accompanied by dimness of sight, or a kind of mistiness, as he described it; and a whizzing in his ears, which was not more on one side than on the other. During the last month, while he was still going about, he complained of an inability to direct his arms and legs, which affected the left rather than the right side. For the last fortnight he kept his bed; and during that time he had frequent twitchings of different muscles; and generally at night, when he fell asleep, was attacked with a convulsion, which almost raised him from his bed. On the fifth day before his death he had three attacks of epilepsy, and one or two on the following days: during the last two days of his life he lay in a comatose state. The body was very carefully examined forty-five hours after death; and Mr. Hilton, who conducted it, has favoured me with the following minute particulars of the appearances.

SECTIO CADAVERIS. — Putrefaction had advanced rather rapidly: the body gave off that very unpleasant smell, which I have experienced in cases of a similar nature; and had the cadaveric sanguineous cellular infiltration on the posterior part of the thorax and abdomen, and the course of the cutaneous veins marked by the putrefactive exudation of blood through their tunics into the surrounding tissue, which was yet fluid and homogeneous in its appearance. Some frothy mucous, slightly discoloured from decomposition, had exuded from the mouth. The eyes were but little shrunk, clear, and the pupils open, or rather dilated: no œdema of the legs

or arms: limbs firm, fixed, and muscular: fingers strongly flexed, and feet extended.

Abdomen.—The great omentum was drawn up to the left side, and almost concealed at the cardinal extremity of the stomach near the spleen: it was not, however, contracted or corrugated, as from the effect of inflammation, but easily unfolded: was transparent, and contained no fat. The other viscera were in the natural position; mesenteric glands being slightly enlarged, but presenting no appearance of suppuration or softening. Peritoneum of the abdominal parietes thickened, without appearances of recent inflammation. The bladder contained about half a pint of clear, light, straw-coloured fluid, not coagulable by heat. About three ounces of slightly turbid reddish serum among the pelvic viscera in the lumbar region. The liver appeared healthy: the granular structure was, however, a little more distinct than natural. On making sections of it, the blood, being fluid, flowed freely. The inferior surface of the liver, in contact with the stomach, was of a dark blue colour, from gaseous decomposition. Gall-bladder contained about an ounce of well-coloured bile, which, on pressure, passed into the duodenum. The pancreas was healthy, and not at all enlarged. Considerable pressure on this gland caused some of its fluid, which was light-coloured and slightly opaque, to appear at the duodenal opening of the duct. Some old peritoneal adhesions were found at the posterior surface of the stomach, just above the pancreas. Oesophagus healthy throughout. The stomach was of ordinary capacity, not thickened; the rugæ of its interior having chiefly a longitudinal direction, little curved, and most conspicuous towards its pyloric extremity: its submucous tissue was rather more vascular than natural, from congested veins: pylorus perfectly healthy. In the first two inches of the duodenum, the mucous membrane was abraded; surface rough, uneven, and granular, from enlarged solitary mucous glands: the whole rather minutely injected with blood-vessels. This diseased condition extended to within a quarter of an inch, or less, of the pyloric opening, where the line of distinction from the healthy points was well marked. In the opposite direction, it did not extend quite so far as the *ductus communis choledochus*; but terminated in a very irregular edge, as if ulceration had been

advancing towards that part unequally. The other portions of the small intestines were healthy; excepting at the lower part of the ileum, where several patches, varying in extent from three to four inches, presented the edges of the valvulae conniventes a good deal injected. There was some bile in the small intestines, mixed with mucous and a pultaceous mass of nutritious ingesta. The sigmoid flexure of the colon appeared to have suffered from irritation of long duration, manifesting more general arterial vascularity than natural; and in some parts, to the extent of a shilling or half-crown, the mucous membrane was minutely injected, and slightly raised, with distinct and enlarged mucous glands, and small vessels passing to each. Some of these spots were near the termination of the colon. Spleen, healthy and firm. The kidneys presented the minutely mottled degeneration, in their secreting structure, depicted and described in Vol. I. of Dr. Bright's Medical Reports, in connection with coagulable urine. The right was rather more advanced in this change than the left; but neither was softened, nor much increased in size. The ureters, bladder, and urethra, were healthy."

"*Thorax.*—About three drachms of slightly-coloured fluid, coagulable by heat, were found in the pericardium. No pleuritic adhesions were observed, except at the upper and outer part of the right lung. The left lung was emphysematous, presenting vesicles on the external surface; one as large as a chesnut occurring on the convex part, and several smaller ones at the lower edge. Structure of the lungs healthy, and not at all tuberculated: the posterior part, however, slightly œdematosus, from cadaveric infiltration. Each pleural cavity contained six or eight ounces of serous fluid, tinged with blood; probably imbibed from surrounding parts after death, as there were no obvious symptoms of recent pleurisy. Heart, large and flabby. The right side contained a good deal of thick fluid blood, and some coagula, with the colouring particles uniformly diffused, shewing great deficiency in the vital power of the blood: these were adherent, by being entangled in the musculi pectinati of the right auricle and ventricle, more especially the latter. Valvular apparatus, on both sides, healthy; with the exception of a little thickening of one of the aortic valves, at its attached edge. The wall of the left ventricle was

hypertrophied, but flaccid: the fibres remarkably pale, almost white, and very soft, easily breaking down on pressure. The cavity of the left ventricle was perhaps a little too large, in proportion to the other cavities of the organ. Lining membrane of the aorta red, and highly tinged by infiltrated blood, which could not be removed by scraping, but did not extend to the middle coat. No coagula in the aorta."

"*Head.*—The superior portion of the frontal bone was much less prominent on the left than the right side: this had been observed some time before death. The bone at this part was not thickened; but the dura mater adhered more firmly than elsewhere, and, when exposed, was found loose and flaccid on the brain, corresponding to the external depression of the cranium. No coagula in the superior longitudinal sinus. The veins contained some globules of air, which had passed from the thorax, through the internal jugular, during the inspection of that cavity. On raising the dura mater carefully, there was a layer of coagulated blood recently effused, about the size of a half-crown, resting between the two layers of the arachnoid membrane; not firmly adherent to either, but more so to the arachnoid of the dura mater, corresponding to the external cranial depression where that membrane was flaccid. Arachnoid opaque and thickened (looking like wet, thin, white leather), from chronic inflammation over nearly the whole of the vertex on each side; rather more on the left; with some little serous effusion under the arachnoid. A small deposit of bone upon, or rather growth of bone from, the arachnoid, on the pia mater, somewhat larger than a pea, was observed under the loose portion of the dura mater, presenting a superior, nodulated, uneven surface. There were also several cartilaginous spots, but none larger than the section of a pea, all on the left hemisphere of the brain. A portion of the falx major, near its junction with the tentorium, was ossified to about the extent of a sixpence, with irregular edges. The pia mater was not adherent, except over the superior part of the left anterior cerebral lobe, where it was slightly so, and some patches of cineritious structure came off with it; and at this point, the convolutions were not so prominent as at the corresponding part on the right side. The cineritious matter remarkably pale and exsanguine; its two layers easily separable by a little pressure between thumb and finger: this was more especially observable on the left side.

The cranial portion of the carotid and vertebral, as well as the basilar arteries, quite healthy, and devoid of coagula. No fluid was found in the lateral ventricles; nor was there any morbid appearance, except that the left corpus striatum was not quite so large or prominent as the right, and that the arachnoid on it was remarkably opaque and thick at its outer edge, throughout its whole length, and for nearly a quarter of an inch in breadth. The outer side of the left thalamus presented, more distinctly than usual, an oval elongated eminence on its superior and external aspect. On slicing the corpus striatum, several cavities presented themselves, having in them branches of arteries quite empty. One of these tubular cavities was sufficiently large to admit a common quill: the others were smaller. It appeared as if the arteries had passed through an oval cyst, or that they had been enlarged to the dimensions of the cavity, and were now contracted. No aneurismal appearance was observed in the artery. The right side of the brain did not present any particular deviation from health."

"*Vertebral Column.*—The spinal marrow and its membranes were examined with care, but did not offer any thing pathological. There was but little spinal fluid within the membranes; and nothing like effusion of either serum or blood."

The whole history of this case is most interesting; shewing, as it appears to do, the connection of this disease, in the first place, with the scarlatina; presenting traces of it through its lengthened progress, attended by occasional indications in the obvious character of the urine, in the slight and often evanescent œdema of various parts, in the tendency to emaciation, in the returns of vomiting and severe headache, and, at last, in the more decided cerebral symptoms; which, after a succession of convulsive seizures, terminated in coma, when probably eight years, at least, had elapsed from the first commencement of the disease. The examination after death is no less interesting; as throwing light on all the various symptoms, and shewing a marked example of the structural change slowly established in the kidney, together with some of those alterations in other organs, which so frequently accompany this change as to give us great reason to believe in their being pathologically connected.

CASE 3.—*Albuminous Urine—Death with Convulsion, after the disease had probably existed four years.*

DEC. 25, 1835, I was requested to come immediately to meet Dr. Prout, in the case of Mr. W—, aged 17. I found him lying on his bed, with his eye-lids half closed, and his eyes rolling about in a kind of convulsive motion; his left hand lying powerless across his body; and his left leg almost paralyzed. His countenance was pale, tongue furred, and dry in the centre: respiration rather loud: pulse above 100, sharp and wiry: general surface, but particularly the head, warm. He complained of pain in the head, and lifted his hand to his forehead. His hearing was preternaturally acute: his vision nearly perfect, so that he saw and distinguished those around him; and he put out his tongue the instant he was desired. His urine was pale-coloured, acid, and very coagulable by heat. While we were in the room, he had a fit, in which both the leg and arm of the left side were violently convulsed; and he cried out with the pain he suffered, piteously requesting us to lay hold of his convulsed limbs. He seemed perfectly intelligent during the whole fit, and answered questions readily. The paroxysm lasted only a few minutes; after which he became placid, and went into the state of repose in which we first found him.

I learnt, on inquiry, that when only twelve years of age, being at school, he was attacked, after some over exertion, with haematuria; and this had recurred several times since, with very copious flow of urine, and a very frequent desire to pass it, so that he was called up three or four times every night. On one occasion, a small calculus had passed, which it is believed was composed of lithic acid, and he had been subject to great headache and constipation of bowels.

About eighteen months ago, Dr. Prout saw him, when labouring under an aggravation of his symptoms; and at the time his attendance was discontinued, the urine was still very coagulable, in which condition it always remained. About three weeks ago he had attended a funeral, and was much exposed to cold; since which he had been obviously worse, though never kept from business. He was seen by Mr. Odling about ten days ago, who found that he had suffered more headache

than usual: bowels constipated: tongue brown, and loaded. He was ordered leeches to the temples, took purgatives, and got so much better, that on Saturday the 19th he was occupied in some business, which required great exertion both of mind and body, and exposed him to the cold; and he found himself so much confused, that he retired to bed; and when he was found there, about nine o'clock, he was affected with a most intense headache, vomiting, and a total loss of sight. Mr. Odling, seeing him in this state, got a large number of leeches; but whilst he was in the act of applying them to his temples, a severe fit came on, of an apoplectic character, in which the patient's countenance became dark and suffused, and his breathing stertorous. He was bled freely from the arm; and this was repeated three times during the night; but he experienced two more fits, like the first. In the morning, Dr. Prout saw him, and ordered cupping from the loins; and whilst this was being done, a fit occurred. On the Tuesday, fits, assuming more the character of epilepsy, occurred; in which the left side, which had remained weak after the first fits, was convulsed. On Wednesday, the fits returned; but it was evident that the mind was unimpaired during the convulsion. On that night they were frequent; and on the following day not less than twenty occurred. On Friday the 25th, the day on which I was called, they had recurred at intervals of about an hour, and were rapidly increasing. At eight o'clock in the evening, he became quite insensible; but he lived, with frequent convulsions, till two o'clock on Saturday morning: thus lingering nearly a week from the first appearance of the severe cerebral disease; during the last five days of which time, it was necessary to draw off his water every eight hours.

No examination was permitted in this case; but it is scarcely to be doubted what would have been the character of the morbid appearances. In this instance, the disease had, in all probability, existed for a period of four years, before it proved fatal.

For the particulars of the following case I am indebted to Mr. Weatherfield; and I give it in his own words. The kidneys presented the most perfect specimens of the granular contracted variety of the disease; and Dr. Babington has given

me a specimen of the nitrate of urea, obtained by Dr. Barlow from the fluid of the ventricles of the brain.

**CASE 4.—*Albuminous Urine—Death with Convulsion—
Kidneys granulated.***

“ABOUT the month of December 1831, I was consulted by Mr. J. G. He was then suffering under dyspepsia, accompanied with frequent attacks of pyrosis: his complaints, he then told me, had been of long standing. I ordered him a few doses of blue pill, rhubarb, and magnesia, which relieved the most troublesome symptoms: and I did not see him again until August 1832, when, from a slight injury, fungous excrescences arose on the extremities of two fingers, which, for a time, resisted all remedies, pouring out a considerable quantity of watery discharge, of a peculiarly faint odour: the application of Goulard-water, with pressure, the patient taking at the same time alterative medicines, at length healed these wounds in the September following.”

“Sept. 1833. At this time, a total change had taken place in all Mr. G.’s symptoms: he had for some time lost the dyspepsia and pyrosis; his appetite was good; and, to use his own words, he could digest any thing: but complained of pain and throbbing in his head, intolerable thirst, huskiness in the throat, swelling of the legs towards night, and of the face in the morning: his pulse was now hard: tongue covered with a creamy coat: urine very abundant. He was advised to be bled; but he neither submitted to that, nor pursued any plan of treatment steadily. He continued much in the same state, till February 1834; when the pain in the head became less frequent, but more severe, returning generally once a week, attended with distressing vomiting: the œdema of the face and extremities somewhat increased: there was now, also, some fluid in the cavity of the abdomen. Soon after this, he took a long journey into the country, where he underwent great fatigue, and suffered from a more severe attack of head affection and vomiting than before; which induced him to return to town, and consult Dr. Babington, which he did on the 26th of March. After a very careful and patient investigation of the case, Dr. Babington, having tested the urine, and

finding it to contain albumen, declared it his opinion that the kidney was the seat of disease. He was ordered to take alternative mercurials and tonics; and to be cupped over the region of the liver, where he complained of pain, increased upon pressure. The following week he saw Dr. Babington again; when he complained of noise in the left ear, and slight numbness of the right hand and foot: the pulse at this time was feeble. Dr. Babington, however, ordered blood to be taken away, if any aggravation of symptoms should occur. On the morning of the 5th of April he was attacked with epilepsy; and a medical gentleman living near immediately bled him. The pulse rose wonderfully, and continued so strong as to induce us to repeat the bleeding the next day; which, together with purgatives, subdued the convulsions for a time. On the 11th of April, however, he was suddenly seized with another fit; which returned at longer or shorter intervals, until the following day, when he sunk."

SECTIO CADAVERIS.

"The membranes of the brain, particularly the pia mater and arachnoid, much thickened; more than two ounces of water in the ventricles; the brain being altogether firmer than usual: the septum lucidum thickened and tough: plexus choroides paler than usual."

"The lungs were emphysematous; the air-cells much enlarged, and ruptured."

"The heart rather larger than usual; the left ventricle somewhat thickened; and the semi-lunar valve slightly ossified: some water was found in the cavity of the chest."

"All the abdominal viscera healthy, except the kidneys; which were much smaller than usual, of a grey and granulated structure."

For the details of the following case, I have to acknowledge the kindness of Dr. Babington and Mr. Wheelwright, under whose care it was, and by the former of whom the history has been drawn up: and its interest is somewhat enhanced, by the fact, that the urine had not been examined, and that nothing had occurred which could, under ordinary circumstances, have led to a suspicion of the kidneys being affected: yet the insidious disease had been silently making its way, till it terminated

with successive symptoms, so precisely similar to those of the other cases I have related, that the examination after death, which shewed that the kidneys alone, of all the organs of the chest and abdomen, were diseased, served at once to explain the otherwise anomalous train of events; and to account for the little benefit derived from remedies, which, in the present state of our knowledge, appear to be altogether powerless in this stage of the disorder. This case affords a strong example of the disease of the kidney passing to its most fatal period, without the slightest symptom of dropsical effusion—a state of things, which, above all, is apt to throw us off our guard, and lead us to overlook the derangement of the kidney: and it points very forcibly to the value of the information, which is probably, in many cases, to be acquired by no other means except the careful examination of the urine.

CASE 5.—Death, with Convulsion and Coma—Kidneys granulated.

“MR. P., an athletic young man of 25 years of age, by trade a plumber, came to Mr. Wheelwright, on the 6th of December last, complaining of dyspepsia, with some degree of dimness of sight. These symptoms being referred to biliary disorder, some aperient medicine, followed by bitter tonics, was administered; and in the course of two or three days, Mr. P. returned to his employment. On the 24th, he was again complaining; and a third time, on the 3d of January, when he remained under medical treatment until the 12th; and even then continued so much indisposed, that he was advised not to return to business. He did so, however, and continued superintending some plumbers’ work on the top of one of the public buildings until the 21st. On that day he was much exposed to the weather; and returned home ill, as if from cold. In the middle of the night he was seized with a fit of a convulsive, but somewhat anomalous character; for he required restraint on the part of his attendants, and yet was not altogether deprived of consciousness. Mr. Wheelwright saw him two or three hours after the commencement of the attack, at five o’clock on the following morning; at which time he was totally blind, had a very powerful and quick pulse, and

was suffering from intense pain across the forehead. He was immediately bled copiously; and was sufficiently sensible to hold out his arm for the purpose, and to recognise Mr. Wheelwright. A brisk cathartic was also exhibited. In the course of the forenoon, he was again bled; and the pain continuing, he was cupped in the afternoon. I saw him, first, on the following day, when there was still considerable arterial power, which was seen, as well as felt, in the branches of the temporal artery: the pain across the forehead, though diminished, was not removed; and the blindness continued. As our patient had already lost upwards of forty ounces of blood, we determined to try the effect of mercury, to the extent of producing mild salivation. On the 25th I visited him again; and found his vision somewhat improved, so that he could distinguish the number of fingers held up before his eyes: the pain of the head was greatly relieved. A topical abstraction of blood, by leeches, was, I think, directed on this occasion; and this was to be followed by the application of blisters to the temples. No signs of salivation yet appeared, and the mercurial plan was continued. I did not see our patient again until the 29th; when I found him complaining greatly of the soreness of his mouth, which had increased so much as to engross all his attention. What particularly claimed our notice, however, was a degree of drowsiness, which seemed gradually increasing, and could not be accounted for by any circumstances in the treatment. The mercury had been discontinued for the last two days; the bowels had acted freely; and the urine had all along appeared of good colour and in sufficient quantity. A chloride-of-soda gargle, and some mild tonic medicine, were prescribed. The drowsiness, however, gradually increased from this time, until a state of complete coma was established, which terminated fatally on the following day. On examination of the body, within a few hours after dissolution, a small quantity of fluid, certainly less than half an ounce, was found in the ventricles of the brain; and there seemed to be some softness in the substance of the brain generally, about its basis; not, however, to such an extent as to constitute a degeneration in its structure. The optic nerves seemed quite healthy, throughout their whole tract. All the viscera, as well of the abdomen as of the chest, were perfectly healthy,

except the kidneys. The peritoneal and proper tunic of these were thickened and opaque; and when stripped off, exposed the surface beneath, rough, and of a grey mottled appearance. This diseased structure was seen, on section, to extend throughout the substance of the organ: both kidneys were equally affected. The urine was, I regret to state, not particularly examined in this case; for there had not been the least tendency to dropsy during the progress of the disease, nor any complaint of pain in the loins to indicate its seat."

The report of the following case is copied from the Museum Note-book; where, I believe, it was written by Mr. King.

CASE 6.—*Albuminous Urine of four or five years' continuance—Death with Convulsion and Apoplexy—Kidneys degenerated.*

“ MARY BROOKS, aged 24, was admitted, under the care of Dr. Bright, into Charity’s Ward, where she had been two or three times before. For four or five years she habitually passed coagulable urine. Her blood had been analysed, both by Dr. Prout and Dr. Babington, and had been found to contain urea: during this time, she had been repeatedly and greatly anasarcaous. Latterly, her head had become affected, and she laboured under fits of an epileptic character. Her complexion was pale; but she appeared well nourished, and less sickly than could have been anticipated from the nature and continuance of her complaint. A few days before her death, she called in the ward, to see the sister: whilst there, she was seized with a fit, from which she never recovered, but remained insensible to the time of her death. It had never been remarked that her pulse was irregular.”

“ **SECTIO CADAVERIS.**—The cranium was unusually thick, with a general but slight irregularity on its surface: there was a small exostosis, apparently of much closer texture than the rest of the scull, about the size of the end of the little finger, situated at the anterior part, near the falx; and there were one or two much smaller ones nearly in the same situation: beneath the arachnoid was a copious effusion of serum. The cineritious substance of the brain was somewhat injected. The

medullary likewise contained more than the ordinary quantity of blood, occasioning a slight marbling, visible on its incised surface: in other respects, the substance of the brain was healthy; but the lining membrane of the ventricles was rather thickened; and in each plexus choroides there was a small defined body, nearly of the size and form of a small horse-bean, which was of a light yellowish colour, and of a moderate degree of firmness: each appeared to be enclosed in a cyst; and the material within was somewhat grumous, especially near its centre. There was merely the ordinary quantity of fluid in the ventricles. The pituitary gland was perfectly healthy. The pleurae were free from adhesions. There was some appearance of inflammation in the left lung, posteriorly. There was likewise some little appearance of pulmonary apoplexy in the right lung; and also some appearance of inflammation, but to a less extent than in the left. The pericardium was healthy. The heart was of moderate size, and likewise healthy, with the exception of a little thickening of the mitral valve: the aorta was healthy; but there was a minute white spot beneath its lining membrane, near its origin. The peritoneum was generally healthy, but there were some old and very partial adhesions, especially in the pelvis: one of these was so situated, as to render internal strangulation a possible event. The stomach and intestines appeared to be healthy; but the solitary glands in the duodenum were rather large. The liver was healthy; but there was a partial thickening of its tunic on the convex surface, connected with an old peritoneal adhesion. The pancreas was healthy. The kidneys were small, rather granular on their surface, of a very firm and dense texture, and of a light colour. From the far-advanced state of the white deposit described by Dr. Bright, their small size was evidently the result of contraction; the cortical part being greatly reduced in thickness, and the surface lobulated, as in the foetus. The uterus was healthy, but apparently in a state of menstruation. The ovaries were rather plump, and their tunics generally smooth, having one or two equivocal appearances of cicatrices: a cyst, about the size of a hazle-nut, and of a dark colour, projected from near the end of one of them: on being cut into, one was found to contain extravasated blood, part of which was of a dark venous colour, and apparently but recently

coagulated; whilst a smaller portion was of a much firmer consistence, and of a lighter and brownish colour, indicating a previous extravasation: it was evidently the result of derangement in one of the vesicles of De Graaf: there were two or three corpora lutea in one or both ovaries."

This young woman was living at the time I published the Second Volume of my Reports (1^o31); and I have there said: "In one very remarkable case, where the albuminous condition of the urine has constantly existed as far as I know, "from frequent experiment for above three years, the quantity "of urea in the blood is very considerable; yet the patient, "who is a young woman, enjoys very tolerable health, and has "a healthful appearance between the severe attacks of anasarca, "of which she has been the subject; but has latterly been "affected with frequent fits, which assume a decidedly epileptic "character. The results of chemical analysis, conducted by "my friend Dr. Babington, were, that the urine did not con- "tain one third of the urea which it does in health, while "about one per cent. of albumen supplied its place. The "serum of the blood was remarkably light, in consequence of "its deficiency in albumen; having a specific gravity of 1021, "instead of 1030; and the quantity of albumen in 1000 grains "of serum amounting, after careful drying, to only 50 grains; "whereas from 80 to 100 parts in 1000 is the usual proportion "in healthy serum; and it contained fully as much urea as the "urine did, the 1000 grains yielding nearly 15 grains of that "substance."

As these observations were made during the life of this patient, the circumstances of the examination after death possess great interest. As far as one case can go, we have the full confirmation of the coincidence of the various symptoms, with the peculiar degeneration of the kidneys, which was anticipated from the long continuance of the disease: we likewise perceive, that there is at least no necessary connection, although there are such frequent coincidences between hypertrophy of the heart and the disease of the kidneys, even where it is attended by the presence of urea in the blood, and has proceeded to the hardening and contraction of the organs. With regard to the question of cerebral symptoms, that is left untouched by this particular case;

because there was a small bony exostosis from the scull, which might have been the source of the epileptic seizures; though very probably this source of irritation would have remained innocuous, but for the state of the circulation induced by the constitutional disease.

CASE 7.—*Albuminous Urine—Sudden Death—Kidneys mottled.*

MARIA H —, aged 21, was admitted, under my care, into Guy's Hospital, Feb. 25, 1835, labouring under most profuse general anasarca, with coagulable urine. We learnt, that the catamenia had come on at the age of 14, and continued regular for three or four years; after which, she became the subject of chlorosis, with irregular menstruation. It was now just fifteen mouths since she observed that her legs began to swell, after having over-exerted herself in walking: this, however, only continued a week; and for two months she was free from all anasarca. About that time she caught cold; and the swelling had continued ever since, varying from time to time, both in situation and degree. The urine was exceedingly coagulable; and she was subject to most intense headaches, often attended with severe vomiting.

This young woman remained under my care for many months, varying almost every week in a remarkable degree, and subject to repeated relapses of anasarca, which she almost always ascribed to some slight exposure, generally to the draught of an open window. She was kept on the mildest diet; chiefly milk, and beef-tea and arrow-root. The remedies employed were principally diaphoretics; amongst which, the warm bath, the hip bath, and Dover's powder were the most important. From the beginning of May to the beginning of September, I confined her entirely to her bed; and frequently obtained a very perspirable state of skin, sometimes almost in excess. This treatment was often suspended and varied, owing to the severe attacks of vomiting. After a time, the catamenia began to return with tolerable regularity. The flow of urine was often very abundant, amounting to four pints in the twenty-four hours, and varying somewhat in the extent of its albuminous qualities, but never quite free from albumen:

and at length, the anasarcaous swellings being reported as entirely gone, she became very desirous of returning home. I however detained her several days, till her mother had provided her with a flannel dress, to wear constantly close to the body; and then, with many precautions, she was to leave the hospital on the following day, Sept. 29: but that very night she died almost suddenly, having only complained in the evening of a severe pain in the loins.

SECTIO CADAVERIS, copied from the Museum Note-book.—
“The only noticeable deviations in the head were, slight serous and clear effusions in the pia mater, and a very remarkable softness of brain: it was not fully dissected. No fluid in the ventricles. The vascularity of the brain substance was considerable. Larynx not examined. The thymus was as large as an egg, flat, and fleshy. The serous cavities were almost healthy, and reddish.”

“The heart was of a full healthy size, muscular, and well contracted. Both ventricles were pretty certainly, in some degree, hypertrophic: the right auricle was fully distended; the right ventricle contained but little. The pulmonary valves acted firmly. The tricuspid also acted well.”

“The blood was well coagulated, fibrinous, and firm. The lungs were everywhere crepitant: the right was of a dark red, as if from excessive injection, with a little fulness of the larger vessels. I could detect little or no emphysema, or other alteration of parenchyma: the left lung was, in addition, slightly œdematosus, chiefly towards its upper part. The bronchial tubes were a good deal injected, and contained some fluid and pasty mucous.”

“The liver was of a good size; yet seemed loose, as if collapsed: it was darkish, especially inferiorly, turgid, and the normal structure indistinct; the secretion, watery, and mucous.”

“The spleen half as large again as natural, coarse and fleshy.”

“The kidneys were somewhat larger in proportion, of a pinkish yellow white colour, yet injected: the cortical columns full and coarse, and the surface slightly speckled with still more opaque white spots, minute and flocculent: the tubular masses a little less pale. The tunics were pretty healthy in appear-

ance. The surfaces of the kidney were even, but marked by slight salient linear interlobular boundaries: the whole substance was firm, and perhaps had begun to contract."

"The bladder contained a good quantity of urine, not very pale. The ovaries were enlarged and round, and darkly injected: their tunics were thin and scarred: many large fluid cysts were found within. The Fallopian tubes healthy: the uterus was lined with a thin layer of grumous blood, firm and adherent."

"The digestive canal was everywhere somewhat fleshy and œdematosus: its peritoneum opaque, and rather pink. The lining of the stomach was still more injected."

CASE 8.—*Albuminous Urine—Death with decided Cerebral symptoms, after the disease had probably existed for two years.*

JEREMIAH COLLINS, aged 50, an Irishman, who has served seven years in the navy, and for nineteen years been a common labourer, was admitted into the Clinical Ward, Feb. 3, 1836. Although he had experienced casual illness before, he considered himself quite well, till two years ago, when he had occasion to drive a cart during the whole of a very rainy day, and was wet through from morning till night. He drank a great quantity of spirits on that day, but not sufficient to produce intoxication. The next morning he found his abdomen a little swollen; penis and scrotum œdematosus; and he suffered pain in the head. He has never since been well, having been frequently laid up; and taking medicine, and working, in the intervals. His mouth, he says, has often been made sore; and he enumerates four separate times, under four different medical men, all of good name and repute, who had put him under mercurial courses, without any marked relief.

The present symptoms are, occasional pain and heaviness of the head, felt principally at night; mouth still under the influence of mercury; cheeks puffed; difficulty of breathing, especially whilst in the horizontal posture; cough, which is most urgent at night; some expectoration; sound of heart unnaturally diffused; palpitation on slightest exertion; abdomen considerably distended, and fluctuation distinct; penis and scrotum, together with both upper and lower extremities,

œdematous ; pupils dilated, but not insensible to light : vision in both eyes has been imperfect for about eight days, so that he cannot recognise any one at the distance of four or five yards.

Feb. 4. Does not seem so well as he was yesterday. Complains of a sensation of fulness in the abdomen. Fainted this morning at eight o'clock ; after which he perspired freely. Bowels open once ; motion cosiue : tongue covered with a brown fur in the centre, white at the sides : pulse 88, rather sharp, but compressible : urine slightly acid, of pale colour, coagulable ; and becoming very much like milk in appearance, on the application of heat.

Applicetur Emplast. Cantharidis Nuchæ.—Habent Pulv. Antimon. gr. v. ter die.—Ext. Col. ē Cal. gr. xv. statim.

5. Has slept well, and his bowels have been freely opened. The swelling of the penis, scrotum, and legs has nearly subsided : pulse 112, weak.—He was put upon the milk diet.

This man rallied a little occasionally, and the œdema was sometimes much diminished ; but, upon the whole, he seemed to get weaker, and the antimonial powder was given up for the camphor mixture with gentle diaphoretics ; and a small quantity of wine was allowed him.

22. He feels better, and the cough and expectoration are much less. One copious healthy motion. About four pints of urine passed in the twenty-four hours, rather dingy. Skin moist : pulse 80.

At 2 o'clock, fainted, and was afterwards sick ; vision becoming more indistinct, and the articulation more difficult. He was again sick about 9 o'clock.

23. Complains of giddiness and of drowsiness, but of no particular pain in any part. Dimness of vision increases : he is now only just able to distinguish a pen held in the hand at the distance of a yard : has cold shiverings frequently. The action of the heart is so much increased by the exertion of raising himself in bed, as to be heard over every part of the chest distinctly. Pulse 80, and soft, while he is lying quiet : bowels not open since yesterday : a large quantity of urine has been voided.

The symptoms, which had been increasing upon him, made rapid advances. In the evening, he became comatose, and died the following morning. No examination of his body could be obtained.

CASE 9.—*Coagulable Urine—Death from Peritonitis—Kidneys much diseased.*

H— M—, aged 43, was admitted into the Clinical Ward, Dec. 16, 1835, with general œdema, sallow countenance, and pale lips. He passed a large quantity of urine, which was highly coagulable; and he had frequent calls to void it. He had considerable cough and expectoration. The account obtained of him was, that he had been a tailor in the corps of Marines for twenty-three years, and had lived a very intemperate life: he had, however, enjoyed good health generally, but about a year ago had acute rheumatism and dropsy; since which time he had been less healthy, suffering frequently from cough, which had greatly increased during the last ten days.

He was cupped at the scrobiculus cordis, and had half a grain of elaterium administered. The report of the following day was, that he had expectorated much muco-purulent matter. He had passed several very watery stools. Urine plentiful; and he had fourteen calls to pass it: it was greatly coagulable, both by heat and nitric acid: of specific gravity, 1020. Pulse 84, weak, but regular. Attention was chiefly paid to the cough, and a local affection of the scalp.

On the 22d, six days after admission, the daily report was—Bowels opened three times: motions of a dirty white colour, and first beginning to get pale two days since. No pain in the loins, but a pain over the region of the liver: no œdema in any part of the body: pulse 88: cough troublesome. The urine remained unaltered in its character: his bowels were freely acted upon by frequent doses of calomel and colocynth: he was cupped over the region of the liver; and he took salines and diaphoretics. On the 27th, there was a slight return of œdema; but this again disappeared; and on the 3d of January it was reported—"Bowels open three times: cough and expectoration almost gone: sores on the head nearly healed."

On the 8th of Jan., considerable œdema returned in his legs and arms; but he chose to leave the house, with a view of returning to his occupation as a tailor; and accordingly went, without any intimation of his intention. When I heard that he was gone, I expressed my regret, and stated my fear of the result; but I was certainly not prepared to expect that within three days we should be requested to come to examine the body.

We learnt, that, on leaving the hospital, he walked home, beyond the town; had a single pint of porter; and expressed

his intention of resuming his employment next day: but in the evening, he complained of pain in the head, and most intense and excruciating pain in the abdomen; which his sister-in-law said she could compare to nothing but labour-pains rapidly succeeding each other; and he was at times delirious: he likewise suffered from excessive shivering and coldness; so that he had a large fire made, and sat before it; opening the blanket, in which he was enveloped, to admit the heat. This state of things continued more or less through the whole of the following day and night; and on the next day, about two o'clock, having for two hours before his death become apparently blind, he died; little more than forty-eight hours having then elapsed from the time when he left the hospital.

SECTIO CADAVERIS.—The arachnoid was slightly opaque, particularly along the middle of the sulci of the convolutions; and there was rather more fluid than natural, both beneath it and in the ventricles. The lungs were healthy and crepitant, without adhesion to the pleuræ: the heart large and muscular, but the valves healthy. The abdomen contained a full pint and a half of serum, evidently the result of acute inflammation: it had nearly the consistence of very thin arrow-root or gum-water, opaque, but not puriform. The liver was quite healthy in its structure; but had an unnaturally light and opaque appearance, owing to a thickened condition of its peritoneum. The kidneys were diseased to the utmost degree: they adhered very strongly to their tunics; were lobulated in shape, large, and almost white, with a slight tinge of yellow. When cut into, they were almost cartilaginous in consistence, shewing the same perfectly white colour, with specks of yellow throughout the cortical part; the tubuli presenting a very strong contrast, by their deep red colour. Of these kidneys a very beautiful model was executed in wax, by Mr. Town; and is deposited in the Museum.

CASE 10.—*Albuminous Urine—Death from Peritonitis—Kidneys diseased.*

W. BURFORD, aged 21, was admitted into Guy's Hospital, under my care, Sept. 23, 1835, the subject of general anasarca, with urine dingy in colour, acid, and very coagulable by heat. He complained of some pain and uneasiness in the loins, and his skin was hot and dry. He was put upon the use of antimonials and Dover's powder; was kept strictly in bed; was cupped on the loins; and subsequently had a seton in that part. It soon, however, appeared that his stomach was peculiarly irritable; and it was necessary to change the remedies, as also to relinquish the milk diet. He made some progress for a time, but it was neither steady nor satisfactory; and in the second week of January he was seized with acute peritonitis, under which he sunk in three days.

SECTIO CADAVERIS.—The heart was large. The lungs gorged with blood and serous effusion. The cavity of the pleura nearly obliterated by both old and recent adhesions: the small cavity which remained was occupied by fluid. On separating the lungs from the walls of the chest, the costal pleura was found completely covered by an adventitious membrane, firm, hard, and even cartilaginous, in some places half an inch thick. The surface of this bore evidence of a more recent softer deposit, which extended upon the diaphragm and surface of the lungs. By using considerable force, this adventitious layer could be stripped off, leaving the surface of the costal pleura entire. The abdomen shewed marks of extensive recent peritonitis, and contained a quantity of an opaque tenacious fluid. The parietes were, in several places, adherent to the viscera, by means of a false membrane, similar to that found in the chest, but neither so thick nor so hard. This adventitious deposit covered the liver, gall-bladder, stomach and duodenum, and arch of the colon, glueing them together, and connecting them to the abdominal walls. The small intestines and lower viscera were tolerably free from disease, but exhibited on their surface occasional patches of the false membrane described above. Two small transparent cysts were attached, by a long very slender peduncle, to the mesentery. The kidneys were very large, and, though decomposi-

tion had advanced far in them, were evidently affected with the diseased mottled structure.

Nothing can be more striking than the similarity which is observable in all these cases. I am not aware of any disease in which the character is more completely preserved, or in which the symptoms more clearly mark a specific form of malady. In the first eight cases, the termination, as well as the progress of the disease, bore the most perfect resemblance; and the peculiar train of cerebral symptoms, by which their advanced stages have been attended, have little analogy, when taken as a whole, with the symptoms of any other cerebral affection. The two last cases differ from the rest only in their mode of termination; and I have related them as the two most recent illustrations of a very frequent result of the disease.

Of the insidious nature of this malady, and its fatal tendency, these cases afford a pretty convincing proof: and the fact, that so many of these have come within my own observation in a limited time, would be tolerable evidence of the extreme frequency of the disease. Yet the cases I have now detailed, but more especially the many more which the length of the present communication obliges me to defer, are chiefly such as I have, without any intention of publication, chanced to enter in my note-book, and form but a small portion of those which I have seen: but, in order to obtain a more accurate idea of the actual prevalence of the disease, it is necessary to have recourse to another species of evidence; and accordingly, in the winter of 1828-9, I instituted a series of experiments, by taking the patients promiscuously, as they lay in the wards, and trying the effects of heat upon the urine of each, and at the same time employing occasionally other re-agents. The whole number I took amounted to 130; out of which no less than eighteen proved to have urine decidedly coagulable by heat: and in twelve more, traces of albumen were found: giving, therefore, an average of at least one in six, if not one in four of the whole number. In order to shew how the experiment was made, and the nature of the table I constructed, I will introduce six consecutive cases out of a male, and six out of a female ward; and it is worth remarking, that in every instance, where the result allowed us to ascertain the

state of the kidneys, it corresponded with the diagnosis yielded by the table. Those who had albuminous urine were found to have more or less of this disease in the kidneys; whilst those whose urine did not coagulate by heat had kidneys without disease.

Name.	Age.	Disease.	General State of Body.	Character of Urine.	Effect of Heat.
John Marshall	45	fistula & phthisis	slightly emaciated	high coloured, clear, slightly bilious	no change.
William Greatrex	51	hydrocele in inflammatory state	heated, and feverish	high brandy colour, looking quite red in large quantity	a few solid flakes first formed, which dissolved, and then the urine became quite clear.
John Jones	15	lepra vulgaris	healthy	slightly clouded	clear.
Thomas Parry	36	peritonitis subsiding	reduced	natural, except a very slight cloud	no change.
Cornelius Harris	22	mercurial rheumatism	.....	light-coloured	no change.
John Freeman	40	carcinoma of penis affecting the inguinal glands	pale and cachectic	fetid, with a cloud	opaque first, and then forming considerable flakes.
Mary Brooks	24	anasarca, from which she has scarcely been free for three years	tolerably healthy-looking young woman, frequently having a good colour, and able to do work of ward	light-coloured dingy	coagulates into a complete curd, the thin part then looking like clear whey.
Marian Challon	29	tic doloureux, and nervous affection of muscles of neck.	slight in make	light amber colour	no change.
Mary Ann Williams	24	diseased ankle	.....	light topaz colour	no change.
Elizabeth Welch	55	asthma	dingy, thick asthmatic complexion	deep topaz colour	no change.
Ann Simpson	13	wound in knee with glass eleven months ago	unhealthy aspect	light straw colour	no change.
Ann Macdonnal	28	suffered from two attacks of an apoplectic character	not unhealthy, no local paralysis	light straw colour, with a tinge of red	no change.

From amongst the patients mentioned in these two abstracts from the more extensive tables, three, within a short time, afforded the opportunity of ascertaining the condition of the kidneys: thus in John Marshall, whose urine did not coagulate, the lungs were full of tubercles; the liver was granular, the kidneys were healthy: in John Freeman, whose urine coagulated, the kidneys were of a pale drab colour, with decided deposit of white matter: and in Mary Brooks, whose urine was known to have coagulated for a long time, the kidneys presented the most marked specimen of the mottled disease.

In the year 1832, my friends Dr. G. H. Barlow and Mr. Tweedie undertook to make for me a still more extensive experiment, extending to nearly 300 individuals; and the result was, that above one in eleven were decidedly affected with the disease. In the year 1835, my pupil, Mr. John Anderson, then officiating as clinical clerk, made, with the assistance of Mr. Gorham, a similar experiment on 141 patients; and a portion of the accurate table he drew out was detailed in a well-digested paper read before the Physical Society of Guy's. In this experiment, the proportion of cases considered albuminous amounted to above one in six; and lastly, a more extended investigation of similar cases, made within a few weeks, and accompanied with a statement of many interesting and valuable results, from the pen of Dr. Barlow, will be found in the next number of this work.

The average of cases affected with the disease under consideration varies much, as might be expected, in different trials; and some explanations, arising from the experiments of Dr. Barlow, of which I have just spoken, will render it highly probable that the average I had taken, amounting to one in six, went beyond the reality: but with every deduction, it still remains an incontrovertible fact, that the disease, in its various stages, from its earliest functional derangement to the confirmed organic malady, is one of the most frequent, as well as of most fatal occurrence: and I think I am fully borne out in the estimate, which I made at the commencement of this paper, that not less than 500 deaths annually occur in this metropolis, from this single disease.

In the TREATMENT of this formidable disease, in the early periods of its attack, I look to the circumstances with which it is most frequently connected—I mean the suppression of the perspiration, and the consequent general inflammatory condition—as most important: and by the removal of these, if the case should come under treatment before the morbid habit is established, and before the system is greatly reduced, I believe we may frequently remove the present danger: and in this state of the disease, active bleeding is frequently a most important part of the treatment. I doubt whether we have it in our power, as yet, even at the earliest periods, to destroy the liability to relapse, or overcome the morbid tendency; but at all events, the management of the early stages of the disease is easy, when compared with the treatment in its more confirmed and protracted forms. There is no doubt that the observations of Dr. Osborne, in his late valuable publication, are excellent, as regards the incipient disease; but I cannot, from my own experience, entertain a hope, that diaphoretics are capable of curing any large proportion of confirmed cases, even when we can bring these remedies to act forcibly and steadily. I have, on the contrary, not unfrequently found the skin exercising its function in a very tolerable degree, without any relief being afforded to that symptom which is, of all, the most important—the albuminous and otherwise altered condition of the urine. Till this symptom be removed, the disease certainly exists: and even when it is removed, it is often absent but for a short time, and it is, for many years, liable to return. It can never be sufficiently impressed upon the minds of practitioners, that the anasarca, which so often occurs in conjunction with this disease, is but a symptom. The disease may exist in all its force, and may be fatal, with its insidious and sudden attacks, without the effusion of a single drop of fluid into the cellular membrane, at any period of its course; and still, more frequently will fatal instances be found, where the anasarca, having existed, has entirely ceased;—facts which have been sufficiently demonstrated by the results of the experiments, on a large scale, made at Guy's Hospital, as well as by several individual cases, both already in the hands of the profession, and brought forward in the present publication. The very interesting communications by Dr. Christison, and the observa-

tions of the zealous and deeply-lamented young physician, Dr. James Gregory, and of my friend Dr. Alison, who all very early turned their attention to this disease, have assisted to substantiate this, as well as many other points connected with its history.

The diaphoretic means, to which I have generally had recourse, have been, antimonial powders, the compound ipecacuanha powder, and the liquor ammoniae acetatis; together with close confinement to the warmth of bed, the occasional use of the warm bath and frequent fomentations, and large linseed-meal poultices to the loins and abdomen. My friend, Dr. G. H. Barlow, has thought that he has obtained almost a specific effect from the tartarized antimony: and I have certainly found it, by his recommendation, a useful adjunct to the diaphoretic mode of treatment: but in Dr. Osborne's publication, which very lately came into my hands, all the means of promoting the important function of the skin are so fully laid down and illustrated, that I cannot do otherwise than refer the reader to his excellent publication. Possibly, my want of success in producing perfect cures may depend on a less vigorous adoption of the necessary means arising from a less sanguine expectation in the result; and, as regards the hospital patients, may depend upon the difficulty of making such strict arrangements as will preclude the probability of the surface being chilled: for I have often perceived, that in this disease, as in phthisis, the necessary and generally most salutary ventilation of large wards was productive of a certain degree of evil; and I have thought that I have distinctly traced, as in the case of Maria H—— (Case 7), the successive recurrence of the anasarca, to the effects of almost unavoidable currents of cool air passing over the bed.

With a view to keeping up the action of the skin, I have been very careful in pointing out to those who have not been confined by the disease, the necessity of wearing an inner dress of flannel at all times. I have suggested the propriety of a residence in some more equable climate; but I have never had an opportunity of giving a fair trial to this measure; the disease being, unfortunately, most apt to occur in those who are least able to submit to the absence from business, and the expense incident to a residence abroad. In a case which I have related above, I have little doubt that residence in a more

northern climate, adopted by the patient, without consultation, was instrumental, aided by imprudent exposure, in hastening the fatal result; and I feel confident, that, in more than one case now under my care, the bad consequences of the disease are kept at bay by rigid adherence to the use of flannel dresses. Perhaps, to give full effect to a change of climate, some decidedly southern abode should be chosen; and a residence in one of the more healthy of the West-India islands, as St. Vincent's, would probably be beneficial.

With regard to the abstraction of blood as a remedial means, it is chiefly in the commencement of the disease that it is decidedly beneficial; and at that time, combined with diaphoretics and strict confinement to bed, general bleeding, freely practised and quickly repeated, is, I believe, most valuable: I have frequently employed it at much later periods, and with temporary advantage. But when we call to mind the constant loss of albuminous matter which the system is sustaining by the kidneys, and the peculiar pallid hue which the patient usually assumes, we shall pause before we venture to afford a temporary alleviation, at a still further expense of the more nutritious and stimulating portions of the blood. Yet there is no doubt, that, even in the most-advanced stages, a strong tendency to inflammatory action, particularly of the peritoneum, often displays itself; and, under these circumstances, nothing but active depletion can meet the emergencies of the case. When the head is affected with pain, throbbing, or giddiness, and the senses are becoming less acute, the indication is by no means so obvious; and although we may believe that a slow inflammatory process has often been going on, yet this is, in many cases, greatly to be doubted; as the symptoms, and many of the appearances after death, admit of a ready solution, from the state of debility and anaemia to which the patient is reduced. Cupping from the nape of the neck generally relieves the symptoms for a time; but blisters are less likely to prove injurious; and perhaps a seton would be found advantageous, though of this I have no experience. When the loins are decidedly affected with uneasiness, or when pressure on the kidneys excites pain, I have known the successive daily application of a few leeches attended by the best results, and I have occasionally introduced a seton.

There is another mode of depletion, which, though it may at first appear but a temporary and mechanical expedient, I am by no means disposed to leave out of consideration: I mean, the discharge of the fluid from the cellular membrane, where anasarca exists, by punctures. It is plain, that when the meshes of the cellular membrane are distended with serum, great obstruction must be given to the capillary circulation; and by emptying them, we afford the most effectual relief to the larger vessels and to the heart.

It is this interrupted circulation in the extreme vessels which is one great source of the death-like paleness which is observable on the parts distended with anasarca, and which often, in this and other forms of oedema, takes place locally, while parts of the body not affected with the serous effusion maintain a more healthy colour; thus shewing, that it is not simply the effect of a general want of blood. It is of great importance that all attempts to draw off the serum by mechanical means should be most cautiously conducted; for the powers of repair are weak, and there is great tendency to erythematous inflammation. The mode which has generally appeared to me most eligible is the introduction of a needle into the cellular membrane, giving it a turn or two laterally, so as to break down a few of the meshes, and thus prevent the small orifice from closing too quickly. Three or four such punctures, made in the calf of the leg or the thick part of the thigh, will give egress to a large quantity of serum, and will often continue to discharge for three or four days. I once collected in this way, in the course of four hours, above forty-four ounces of serum; and the puncture continued to flow, affording the greatest relief. The operation should not be repeated for some days; or the part should be varied; as the punctures sometimes inflame, even after they have appeared to heal. The spontaneous discharge from vesications taking place, owing to the inflammation of the surface, has sometimes afforded great relief. Dr. Barlow of Bath, who, with the wonted energy of his character, very early took an interest in the investigation of this disease, was kind enough to communicate to me several cases which occurred to him in the Bath Infirmary, so long ago as the years 1830 and 1831; and, in one of these, he calculated, that, for many days, a patient lost

by this means some quarts daily; and the patient is believed to have recovered completely.

It is a very great question, how far the existence of albuminous urine contra-indicates the use of mercury. I have myself been led to think, with Dr. Blackall, that it is generally better to avoid the exhibition of this remedy; which opinion I find advocated likewise by Dr. Osborne of Dublin. Yet, amongst the communications of Dr. Barlow of Bath, he has furnished me with one or two cases, in which he has boldly used both mercury and diuretics; and the cases have been attended with more than an average success.

Dr. Prichard, in his very excellent address delivered at a late meeting of the Provincial Medical and Surgical Association, assures us, that for several years the question has been brought to the test of experiment in the Bristol Infirmary, whether mercury is injurious in all cases of dropsy with albuminous urine; and that it has been proved, in numerous instances, where the treatment advised by Dr. Blackall has totally failed, that the same cases have terminated in recovery, under a moderate use of mercurial remedies. The authority is great, and the appeal to extensive experiment cannot but ensure most respectful attention: yet I am strongly inclined to believe, that, whatever may be the exceptions under most cautious management, the use of mercury had better, as a general rule, be avoided. When I first published upon this subject, I stated that I had seen much decided mischief from the use of this remedy; yet that I had undoubtedly seen well-marked cases, in which the free use of mercury, even to complete ptyalism, had at least not prevented the patients from deriving great, perhaps even perfect relief from the remedies with which it was combined: and, on a later occasion, I have observed, that I have seen the combination of mercury, squill, and digitalis, give present relief, and produce apparent cure: yet I am bound to say, that these cases are rare, while the instances of failure and obvious injury from this remedy are numerous. To illustrate this class of cases, I might refer to very frequent experience. The case of Jeremiah Collins, which I have given above, will serve as an example of what is continually occurring in the history of the lower classes; while the following case from private practice serves to shew,

that it is not only those who are deprived of the comforts and conveniences necessary for the proper administration of mercury who seem to suffer from the mercurial mode of treatment, without deriving any obvious advantage.

CASE 11.

I WAS requested, in the month of December last, to see, in consultation with the medical attendant, Mrs. B., a middle-aged woman in easy and comfortable circumstances, who, however, had not been sufficiently careful with regard to her mode of living. She was first made aware of the decided failure of her health about a year and eight months before, when anasarca shewed itself. She said she had, from that time, been under the care of various physicians; but had never derived any decided advantage, and was much worse than at any former period. She was now, indeed, the subject of the most general and profuse anasarca; and for several months past had experienced epileptic seizures. She was exceedingly drowsy, and had difficulty in lying down in bed. She passed about a pint of urine in twenty-four hours, which became a complete white curd on the application of heat. I found that various remedies had been employed; but above all, she entreated me not to put her under the use of mercury, which, she said, had been tried for a long time without any good effect, but was attended with the greatest discomfort, and followed by increased debility. I recommended her to take antimony and Dover's powder; to apply a blister to the nape of her neck; and to try an infusion of the *uva ursi*. Of the result of this case I know nothing; but have little doubt as to the event.

It may indeed be fairly urged, that, with such a list of fatal results before us, in which various remedies have been used, it is unjust to fix upon mercury the peculiar reproach of failure. I can only answer, that, in general, it has appeared to me, that those who, in the confirmed forms of this renal affection, have abstained from mercury, have broken down more slowly under the disease, than those who have taken it to any extent, more particularly if they have persisted till its constitutional effects have completely manifested themselves. I believe, however, that, in the very early stages of the acute

renal disease, mercury, given in combination with opium and antimony, and associated with bleeding, may be a useful means of reducing the inflammatory action: and I am still by no means inclined to despair of our arriving at the means of administering very minute doses of this powerful remedy, in such combinations, as to lead, by long continuance, to some degree of change in the morbid structure which has taken place in all the advanced cases; or to act more decidedly in promoting the absorption of the morbid deposit, if we shall ever arrive at a knowledge of the probable period when the morbid change is in its truly incipient state. I have hoped, in iodine, and in the hydriodate of potash, to find remedies adapted to the furtherance of the same object; but I cannot say that, as yet, my experience has borne out these hopes.

Purgatives have produced decidedly good effects in some cases, more particularly in reducing the anasarca; so that there has been reason to ascribe the chief relief, on several occasions, to their action. Amongst these, the various saline purgatives have been employed; and the combination of rhubarb with the sulphate of potash, assisted in its action by some purgative tincture. But the elaterium, under careful management, has likewise been employed, either in grain doses given once, or in the fractional part of a grain repeated after a few hours till the desired effect has been produced upon the bowels: and sometimes I have found a mild and efficient action from giving a small dose of elaterium, and following it, in three or four hours, by a dose of castor-oil with three or four drops of laudanum. I have never made trial of the croton: it might possibly act well; but, like all other drastic purgatives, must be given cautiously, on account of the feeble condition to which the mucous membrane of the intestines is often reduced in this disease, and its tendency to assume a state of over-action.

With regard to diuretics, I have generally wished to abstain from all, except digitalis; and yet I have not unfrequently found myself almost forced to their adoption, when other remedies have failed, in the hope of restoring, for a time, the secretion of the kidney, which has been so greatly reduced as to threaten an entire suppression. I look upon this class of remedies, however, in the light of a necessary evil in such cases; and do not feel authorised in recommending their

employment. Very generally, diuretics seem obviously uncalled for, the secretion being already in excess.

Much as may be effected by active remedies in the acute state of the disease; in its chronic and advanced stages, particularly when any change may be supposed to have slowly taken place in the structure of the kidneys, our hopes must rest upon such remedies as produce a more gradual effect, and whose action is therefore not so obvious, and perhaps not so certain, but frequently, I have no hesitation in saying, most salutary. These remedies must vary according to a variety of circumstances, and must be persevered in for almost an indefinite length of time. Amongst these may be mentioned, small doses of carbonate of soda; *uva ursi*, in its different preparations; small doses of antimonial remedies; and all these, combined with some anodyne, as the *conium*, or, still better, the compound *ipecacuanha* powder. The very careful exhibition of the *vinum ferri*, the *tinct. ferri muriatis*, or some other chalybeate preparation, has sometimes appeared to do good for a time, but has not generally been admissible for a continuance. Strict attention to the state of the bowels is also indispensable; and becomes the more necessary, because their function is very apt to be interfered with, and their action to become irregular. Sometimes there is a strong tendency to diarrhoea, and occasionally quite an opposite condition exists: some mild combination, calculated to act gently and regularly, should be used; but the exact form will depend very much on our experience in the individual case, as the object should be to produce an action as nearly like the natural as possible, all unnecessary irritation being avoided.

A great deal still further depends upon diet. Where milk is grateful, if it sits easily on the stomach, and is freely digested, I believe it to be one of the best aliments which can be taken. Light animal food frequently agrees: tea should be avoided: all badly cooked vegetables, and all fruits, will often be found injurious. The great rule is, to avoid every thing which obviously deranges the stomach; and to take tonic and nutritive, but not stimulating food. The less of wine and spirituous liquors is taken, the better.

On the subject of clothing I have already said all that is necessary: let flannel be worn constantly, and every precau-

tion be habitually adopted which may obviate the effects of whatever is calculated to chill the surface or check the perspiration. With regard to exercise, let it be gentle, but sufficient; and if perspiration be induced, which is sometimes the case, from very slight exercise, the greatest care is necessary. If horse exercise is employed, every thing like hard riding and severe exertion to the loins must be avoided. The exposure of an open carriage for any length of time, if the temperature of the air be low, and more particularly when the circulation has been previously excited by a walk, is injurious, and even dangerous.

I am aware of the difficulty of effectually enjoining all these restrictive rules; and continuing them, even when the patient considers himself so well as to be able to live like those around him. They are, however, necessary, if he wishes to prolong his life: this is the alternative on which he has to decide. The cases which I have given in the commencement of this communication, while they shew the danger, shew likewise, that, with very little attention to precautionary measures, life may be prolonged in this disease for many years: but I have every reason to believe, that none of these cases approach nearly to the length of time during which the reasonable enjoyment of all the comforts of life may be continued, where the circumstances of the patient allow him to adopt, and his resolution enable him to persevere in, the means which his medical adviser may suggest.

TABULAR VIEW
 OF THE
MORBID APPEARANCES IN 100 CASES
 CONNECTED WITH
ALBUMINOUS URINE.
 WITH OBSERVATIONS.

BY DR. BRIGHT.

THE following tabular digest of one hundred cases, in which the mottled and granular kidney has existed, and in most of which the renal affection was a prominent feature of the disease, has been formed almost entirely from cases which have occurred within my own observation: some of them have been under my care during life; but in almost all, I have been present at the examination after death; and the appearances are either such as I have myself noted, or, where I have neglected to do this, the ample records of our Museum manuscripts have furnished me with the necessary details. The first thirty-three of the dissections which I have reduced to a tabular form have already been published in another shape, in my Medical Reports: the remaining sixty-seven are unpublished cases, of most of which it was my intention to have given an account in the present communication; but the press of matter obliges me to defer them to a future number of this work.

I will not assert, that every individual case recorded in the table was ascertained, during life, to have been the subject

of albuminous urine. In a very large majority, the condition of the urine had been carefully examined: in some, it was not tested till after death; and in a few, no decided information upon the subject could be obtained: but in no case has there been any ground to doubt the existence of this very frequent symptom. It has not been possible to introduce into the table a more detailed description of the state of disease in the kidney; and the terms 'hard' and 'soft' have generally been adopted, to point out the contracted, and what is presumed to be the more-advanced stage of the degeneration, as compared with the more recent disorganization. There may, however, be some reason to doubt whether the different states of the organ are not rather evidence of modifications in the diseased action, than correct indication of the duration of the disease. Those who wish to appreciate more exactly the appearance of the kidneys in these cases, will find well-marked examples of what I have styled the 'hard kidney' in the first and third plates of the First Volume of my Medical Reports; and some varied modifications of the soft condition of the kidney, in the second, third, and fourth plates of the same volume.

CASE.	Kidney.	Pleura.	Lung.	Pericardium.	Heart.	Cavity of Abdomen.	Peritoneum.
1. John King, æt. 34, died of pericarditis	hard, granulated	adhesion & effusion	hepatized & œdematosus	effusion of fibrin	large and firm, with slight de- posit on one semilunar valve.	effusion	.....
2. Eliz. Beaver, æt. 37, died of effusion in chest	soft, large, granulated	effusion	healthy	slight effusion	small and weak	effusion	.....
3. Mary Sallaway, æt. 25, sunk exhausted	soft, mottled	effusion & adhesion	tuber- culated	.....	healthy	effusion	.....
4. Daniel Peacock, æt. 30, died of dia- rrhea and erysipelas	soft, large, much white deposit	effusion	healthy	.....	healthy, small	.....	.....
5. H. Thomas, æt. 34, died of pleuritis	soft, large, mottled	effusion, with recent fibrin	firm, congested	.....	flaccid	.....	recent in- flammation
6. Mary Ann Rich- ardson, æt. 45, died suddenly	hard, large, granulated	.....	pulmonary artery plugged with fibrin	.....	healthy	vena portæ and splenic vein plugged with fibrin	.....
7. Eliz. Stewart, æt. 40	hard, small, granulated, contracted	not seen	not seen	not seen	not seen	effusion	.....
8. W. Bonham, æt. 55, died of pul- monary obstruction	hard, small, granulated, contracted	adhesion & effusion	œdematosus	.....	hypertrophy of left side	.....	.....
9. — Smith, æt. 35, died of effusion in chest	hard, granulated	effusion	healthy	effusion	healthy	.....	.....
10. M. Castle, æt. 39, died of pulmo- nary obstruction	hard, contracted	adhesion	bronchitis & œdema	slight effusion	pale and flaccid	effusion	.....
11. H. Izod, æt. 25, died of pulmo- nary obstruction	soft, large, white	effusion	œdematosus, a few old healed tubercles	.....	healthy	effusion	.....
12. — Galloway, æt. 22, died epi- leptic, with pleuritis	soft, mottled	effusion with recent fibrin	slight pneu- monia and bronchitis	slight effusion	hypertrophy of left ventricle	.....	.....
13. T. Drudget, æt. 37, died of apoplexy and convolution	soft, mottled	slight effusion	healthy	slight effusion	healthy	.....	.....
14. Leonard Evans, died suddenly from œdema of epiglottis	soft, large, highly congested	very slight effusion	gorged	healthy	healthy	.....	.....
15. W. Roderick, æt. 45, died exhausted	soft, mottled	effusion	œdematosus	effusion, and thick coating of fibrin	rather large	.....	.....
16. — Hobson, æt. 44, died of pleuritis and pericarditis	soft, granulated	recent adhesion	.....	thick coating of fibrin	rather large	effusion	recent and old inflam- mation
17. W. Hunter, æt. 47, died epileptic and exhausted	soft, granulated	effusion & adhesion	a few tubercles	slight effusion	hypertrophy of left ventricle	.....	.....

Liver.	Intestines.	Stomach.	Spleen.	Pancreas.	Aorta.	Brain.	Uterus.	Bile.
healthy	distended with flatus, mesenteric glands large	.....	dark coloured	healthy	.....	.....	.....	healthy.
slightly diseased	distended with flatus	.....	healthy	healthy	.....	.....	small	healthy.
very slightly diseased	ileum ulcerated	.....	.....	.....	.....	slight ossification	.....	thin.
slight granular disease	irritated throughout	.....	healthy, but with a casual white deposit	.....	.....	healthy	.....	deficient.
spotted	irritated throughout	healthy	.....	.....	.....	.....	.....	healthy.
spotted	.....	.....	healthy	.....	.....	.....	.....	green.
spotted	.....	.....	.....	.....	.....	.....	.....	healthy.
rather solid	healthy	.....	soft	healthy.	.....	.....	.....	.....
healthy	duodenum vascular	vascular	healthy	.....	.....	.....	.....	.....
spotted.	.....	.....	.....	.....	.....	.....	.....	.....
healthy	healthy	mucous membrane grey	small.	.....	.....	.....	.....	.....
very healthy	healthy	healthy	healthy	congested	.....	.....	.....	healthy.
healthy	healthy	healthy	soft	.....	.....	healthy	effusion of blood into all the ventricles.	.....
healthy, but gorged	.....	.....	soft	.....	.....	.....	.....	.....
healthy	irritated & ulcerated	.....	fleshy	.....	.....	ossified	.....	diluted bile.
diseased	mucous membrane congested	.....	very large	large and firm	.....	.....	.....	light green.
spotted	.....	.....	.....	.....	.....	large	effusion into ventricles	turbid orange colour.

CASE.	Kidney.	Pleura.	Lung.	Pericardium.	Heart.	Cavity of Abdomen.	Peritoneum.
18. James Jones, æt. 45, died of cerebral irritation	soft, large, mottled slightly	adhesion	healthy	.....	large, flaccid	effusion of clear serum, with transparent membranes	opaque, and old adhesions
19. Man of Colour, æt. 55, died of effusion of blood on brain	hard, small, contracted, scabrous	adhesion	hardened by old pneumonia, bronchi dilated	.....	great hypertrophy of left ventricle	effusion of clear yellow serum	.....
20. Jas. Kennedy, æt. 63, died of softening of brain	slightly granulated	.....	.....	.....	mitral valve ossified	.....	.....
21. John Ruggles, æt. 46, died of bronchitis, with œdema	slightly granulated	old adhesions	partial hepatization, bronchitis	.....	large, right ventricle thick	.....	.....
22. Thos. Tweed, æt. 52, died with symptoms of cerebral congestion	soft, extensive white deposit	old adhesions	gorged, and partially hepatized, bronchitis	.....	large and flaccid	.....	.....
23. Margaret Field, æt. 40, died with anasarca comatose	hard, rough, lobulated	adhesions	bronchitis, & lobular pneumonia	effusion of serum	firm, large	abundant effusion of serum	.....
24. Jane George, æt. 36, died with anasarca	hard, granulated, mottled	strong adhesions	.....	general cellular adhesion	great hypertrophy of right side, disease of all the valves, particularly the tricuspid	effusion	opaque, and thickened
25. —— Jessy, died apoplectic	hard, granulated	.....	healthy, with slight hepatization	.....	large valves healthy	.....	.....
26. —— ——, died apoplectic	hard, pale, granulated	general adhesion	healthy	.....	left side rather too firm	.....	.....
27. —— ——, æt. 73, died comatose	hard, granulated	inflamed	emphysema, partial inflammation	.....	left side firm, mitral valve and tricuspid diseased	.....	.....
28. John Baldrey, æt. 61, died apoplectic	hard, granulated	slight adhesions	emphysema, apex indurated	healthy	large, particularly left ventricle	.....	.....
29. Robt. Wardess, æt. 50, died apoplectic	soft, white	inflamed	œdema, and emphysema	.....	coronary vessels ossified	.....	.....
30. Wm. Saunders, æt. 47, died apoplectic	hard, small, contracted	inflamed	compressed	fibrin, and viscid serum	hypertrophy of left ventricle	.....	.....
31. Martha Russell, æt. 40, died of hydrothorax	hard, small, granulated	great effusion	healthy	.....	hypertrophy of left ventricle, disease of mitral valve	.....	.....
32. M—— L——, æt. 40, died epileptic	hard, granulated, contracted	.....	.....	.....	.....	.....	adhesions
33. S. Barnet, æt. 28, died epileptic	hard, scabrous	.....	.....	.....	.....	.....	.....

Liver.	Intestines.	Stomach.	Spleen.	Pancreas.	Aorta.	Brain.	Uterus.	Bile.
granulated	contracted	mucous membrane granulated and sebaceous	very large and firm	.....	healthy	arachnoid opaque.		
slightly granulated	.....		small	.....	dilated, atheromatous deposit	great effusion of blood on surface, and marks of old similar disease.		
hard, granulated	.....		small, rather hard	.....		softened externally, vessels diseased.		
gorged with blood	congested			.....		vascular and mottled.		
					few opaque spots	brain marbled with congestion, serum beneath the arachnoid, vessels atheromatous		
somewhat fatty	large intestines, ulcerated throughout	.....	healthy	healthy	.....	.....	some cysts in the ovaries	mucus with bile.
hard, and full of blood	mucous membrane edematous	thick and granular	.....	.....	.....	much serum beneath arachnoid	enlarged.	
slightly granulated	healthy	slightly contracted	external cartilaginous deposit	healthy	atheromatous	serous effusion, disease of plexus choroidei		calculi and little bile.
gorged with blood	.....	distended with flatus	.....	.....	.....	serous effusion in arachnoid, disease of choroid plexus.		
healthy	contracted	healthy	small and contracted	obstructed	.....	serous effusion.		
healthy	healthy	mucous membrane thick and corrugated	cartilaginous deposit externally	healthy	diseased throughout	apoplectic clot, vessels diseased.		
					extensive ossification	apoplectic clot, serous effusion, vessels diseased.		
granulated	.....	mucous membrane hard and rough	.....	.....	.....	diseased vessels, old apoplectic clots.		
healthy	.....			.....	.....	apoplectic clot, vessels diseased.		
						calvaria thick and solid.		
healthy	soft	soft	hard	.....	.....	calvaria thick and solid.		

CASE.	Kidney.	Pleura.	Lung.	Pericardium.	Heart.	Cavity of Abdomen.	Peritoneum.
34. Mr. R—, <i>æt. 33, epileptic, & died comatose</i>	soft, granulated	effusion	emphysema, and œdema	slight effusion	flabby, but hypertrophic in left ventricle; one aortal valve diseased	.....	thickened
5. Mr. G—, <i>died epileptic</i>	hard, small, granulated	effusion of serum	emphysema	.....	large, particularly left ventricle; semilunar valves slightly diseased	.....	.....
36. Maria Hill, <i>died quite suddenly</i>	soft, large, white	.....	healthy, slight œdema	.....	hypertrophy general, right auricle distended	.....	.....
37. Hugh Maclean, <i>died of peritonitis</i>	hard, large, white	healthy	healthy	healthy	large and muscular, valves healthy	inflammatory effusion	inflamed
38. A German, <i>died suddenly</i>	hard, scabrous	effusion, old adhesion	healthy	.....	healthy	.....	.....
39. Mary Thomas, <i>æt. 23</i>	hard, granulated	effusion	healthy compressed	slight effusion	healthy	great effusion, mesenteric œdematoous, some glands enlarged	a few old adhesions on the liver
40. —— Beckwith,	hard, scabrous	.....	emphysema, œdema, trachea, unhealthy	.....	healthy	.....	.....
41. —— ——,	hard, scabrous, lobulated	slight effusion	solid, from œdema and congestion	.....	hypertrophy of left ventricle, valves healthy	mesenteric glands enlarged	.....
42. —— ——,	hard, scabrous	.....	old and recent tubercles	.....	light-coloured	.....	.....
43. —— Jackson, <i>died in convulsion</i>	hard, contracted, lobulated	effusion, old adhesion	œdema	.....	hypertrophy of left ventricle, valves healthy	.....	.....
44. —— Preston, <i>died quite suddenly</i>	hard, contracted, scabrous	effusion, and old adhesion	old tubercles	.....	hypertrophy of left ventricle, mitral valve ossified	effusion	.....
45. —— ——,	hard, lobulated	effusion	compressed	.....	large, semilunar valves diseased	effusion	slight false membrane
46. —— ——, <i>died with coma, and convulsion</i>	hard, contracted, scabrous	effusion	œdema, emphysema, bronchitis	effusion	hypertrophy of heart, valves healthy	.....	.....
47. —— ——, <i>sunk suddenly</i>	hard, contracted, scabrous	effusion, & recent fibrin	.....	effusion	hypertrophy of left ventricle, valves healthy	.....	.....
48. —— Collins, <i>died suddenly, in a fit of vomiting</i>	hard	effusion	œdema, emphysema, bronchitis	effusion	hypertrophy of left ventricle, slight valvular disease	.....	.....

<i>Liver.</i>	<i>Intestines.</i>	<i>Stomach.</i>	<i>Spleen.</i>	<i>Pancreas.</i>	<i>Aorta.</i>	<i>Brain.</i>	<i>Uterus.</i>	<i>Bile.</i>
slightly granulated	duodenum granular and abraded; other marks of mucous irritation	healthy	healthy	healthy	.....	arachnoid opaque, serous and slight sanguineous effusion.	.....	good.
healthy	edematous	.....	.....	.....	.....	effusion into ventricles, membranes opaque.	ovaries large.	
healthy, inflammatory effusion on surface	.....	.....	.....	.....	.....	slight opacity of arachnoid, with effusion under it & into the ventricles.		
slight disease, hard & mottled	.....	ramification of vessels on the mucous membrane	large, solid	.....	dilated, and having atheromatous deposits	healthy.		
healthy	healthy	healthy	healthy	healthy	.....	.....	healthy	healthy.
healthy	obstructed from an old adhesion of the omentum	ramification of vessels on the mucous membrane	healthy	.....	.....	slight effusion under the arachnoid	Fallopian tubes obstructed	healthy.
remarkably healthy	healthy	.....	.....	.....	atheromatous.			
mottled, & containing tubercles	colon and ileum ulcerated	.....	healthy.	.....	.....	
rather firm, and light-coloured	healthy	.....	large	.....	slight atheroma	scull and membranes thick, effusion in membranes & ventricles, plexus and brain exsanguine.		
remarkably healthy	.....	mucous membrane granular	.....	.....	.....
slight granulation	.....	ecchymosis of mucous membrane	healthy	healthy	.....	arachnoid opaque, effusion underneath.		
healthy	healthy	healthy	healthy.	healthy.	.....		
light-coloured.	.....	.....	.....	.....	.....
remarkably healthy, but gorged with blood	healthy	healthy	very large	healthy	some opaque patches	fluid effused under arachnoid	.....	healthy

CASE.	Kidney.	Pleura.	Lung.	Pericardium.	Heart.	Cavity of Abdomen.	Peritoneum.
49. A. Leonard, æt. 45, died from pulmonary obstruction	hard, contracted, scabrous	effusion, with old and new adhesions	apoplexy and bronchitis	.....	hypertrophy of left ventricle, valves healthy	.....	old adhesions on liver
50. Mary Brooks, died in convulsions	hard, lobular, scabrous	recent slight inflammation	slight apoplexy	.....	muscular, with slight trace of mitral disease	.....	slightly thickened on the liver
51. — —	soft, white, mottled	slight old adhesion	one or two old tubercles in apex	.....	healthy	.....	.....
52. — —	soft, white, mottled	.....	slight apoplexy, and cretaceous deposit	.....	healthy	.....	.....
53.— Hewett, æt. 41, died in convulsions	soft, white, mottled	.....	healthy	effusion	healthy	effusion	.....
54. A. Jackson, æt. 48, died from pulmonary obstruction	soft, mottled	.....	œdema, and consolidation	.....	gorged	.....	.....
55. J. Stedman, æt. 33, died comatose	soft, large, flabby, white	.....	œdema, emphysema, and bronchitis	.....	firm and thick	effusion	.....
56. J. Roberts, æt. 28, died from pulmonary obstruction	soft, large, flabby	.....	œdema and carification	general old adhesions	large, mitral and semi-lunar valves diseased	.....	.....
57. William Camp, æt. 46, died of peritonitis	large	.....	slight bronchitis	.....	healthy	great effusion, with flakes of lymph	covered with false membrane
58. William Lovett, æt. 18	soft, large, white	.....	.....	.....	gorged	.....	.....
59. W. Hart, æt. 28, died of diarrhoea and exhaustion	soft, white, mottled	.....	healthy	.....	healthy	.....	.....
60. Maria Tapley, æt. 27, died of effusion in chest	soft, light	great effusion	œdema, emphysema, old gritty tubercles in apex	slight effusion	small, with ecchymosis	inflammatory effusion	inflamed
61. T. Smith, æt. 24, died of peritonitis	soft	old and recent effusion	healthy	.....	.....	inflammatory effusion	inflamed
62. H. Hill, æt. 8, died exhausted by hip-disease	soft	.....	.....	.....	.....	mesenteric glands large	.....
63. — —, died of gangrene of lung	soft	empyema	right gangrenous and compressed	.....	.....	.....	.....
64. — —	soft, large, white	.....	.....	.....	.....	.....	.....
65. — — Smith, died of peritonitis	soft, yellow, mottled, large	.....	healthy	.....	healthy	puriform effusion	acute inflammation
66. W. Burford, died of peritonitis	large, soft	recent and old adhesions and effusion	edematous	.....	large	dirty-looking serum, and old adhesion	acute inflammation supervening on old
67. Dr. Barlow's case, died of phthisis	contracted, mottled, with cysts and obstructed tubuli	old adhesions and effusion	phthisical tubercles	.....	.....	.....	.....

Liver.	Intestines.	Stomach.	Spleen.	Pancreas.	Aorta.	Brain.	Uterus.	Bile.
granulated	duodenum ulcerated	pylorus scirrhouſe, & ulcerated	.....	.....	some opaque patches.	.....	.....	.....
remarkably healthy	healthy, but mucous glands in duodenum large	healthy	healthy	healthy	healthy	small exostosis on cranium, effusion under arachnoid	ovary diseased.	.....
very slight granulation	colon ulcerated	healthy	healthy	healthy	.....	.....	slight disease	healthy.
large and firm	.....	.....	.....	.....	.....	.....	.....	tolerably healthy.
remarkably healthy	healthy	.....	small	healthy	healthy	effusion under arachnoid.	.....	.....
healthy, but gorged with blood	healthy	.....	light-coloured.	.....	.....	.....	.....	.....
healthy, but gorged with blood	colon diseased	.....	soft, and light-coloured	healthy	.....	effusion.	.....	.....
.....	.....	.....	.....	.....	.....	remnant of sanguineous effusion.	.....	.....
much diseased	.....	healthy	healthy	hard	.....	.....	slight effusion under arachnoid	.....
remarkably healthy	vascular	healthy	very large and tuberculated.	.....	.....	.....	.....	.....
.....	mucous membrane scabrous	.....	.....	.....	.....	.....	slight effusion into the ventricles.	.....
soft	ulcer in ileum	mucous membrane vascular	healthy	healthy	.....	.....	.....	light green.
healthy	pulpy.	.....	.....	.....	.....	.....	.....	.....
healthy.	.....	.....	.....	.....	.....	.....	.....	.....
large and unhealthy	injected	.....	.....	.....	.....	.....	.....	pretty healthy.
fatty	.....	.....	.....	.....	.....	.....	.....	mucus tinged with bile.
.....
large and granulated	ulcer in small intestines	.....	.....	.....	.....	.....	clot of blood in ovary.	.....

CASE.	Kidney.	Pleura.	Lung.	Pericardium.	Heart.	Cavity of Abdomen.	Peritoneum.
68. J. Commerford, æt. 50, died with diarrhoea and coma	hard, contracted, granulated	serous effusion	œdematosus	serous effusion	general hypertrophy, tricuspid valve diseased	.....	.....
69. S. Veal, æt. 35, died delirious with exhaustion	hard, firm, mottled	old adhesion, and slight effusion	old chronic tubercles	.....	firmly contracted, mitral valve slightly ossified	.....	old adhesions
70. Fred. Crown, æt. 47, died with convulsions	hard, small, granulated	slight adhesion	healthy	slight effusion	great hypertrophy of left ventricle, valves healthy	serum effused	.....
71. —— Brain, died comatose	hard, granulated	.....	œdematosus	.....	great hypertrophy of left ventricle, valves healthy	.....	.....
72. —— —, ——	soft, mottled	healthy	healthy	sanguineous effusion	healthy	.....	.....
73. —— —, ——	hard, granulated	great effusion in right side	the right compressed by fluid, the left by heart	thin layer of recent fibrin	general hypertrophy, valves nearly healthy	effusion	.....
74. Jane Webster, æt. 53	.....	.....	a few tubercles, lungs gorged	healthy	hypertrophy of left ventricle, and some thickness of mitral valves	.....	.....
75. Edw. Morgan, æt. 25	soft, large,	adhesion, effusion	healthy	slight effusion	healthy	great effusion, no inflammation	.....
76. James Prior, æt. 52	soft, partly mottled	adhesion, effusion	healthy, but gorged	slight effusion	greatly enlarged, flabby, soft, dilated, left ventricle chiefly	effusion	slightly inflamed
77. Charles Ossery, æt. 25	soft, large, mottled	recent adhesion and effusion	compressed	.....	small, flaccid	effusion	inflamed, & old false membrane
78. Bridget Cannon,	large, pale	old adhesion, great effusion	partially hardened	.....	large	slight effusion	inflamed
79. Thos. Smith, æt. 40, died of disease of knee-joint	incipient white degeneration	old adhesion	a few old tubercles nearly well	slight effusion	healthy	.....	healthy
80. John Warren, æt. 50	hard, small, pale	old adhesion	œdema and emphysema	.....	large, left ventricle much thickened, muscle pale, no valvular disease	.....	healthy
81. G. Tregg, æt. 48, died from pulmonary obstruction	hard	extensive old adhesion	bronchitis, lungs permeable, but solidified	universally adherent	large, valves of left side thickened and bony	pale fluid effusion	partially opaque
82. J. Elliott, æt. 67	hard	extensive effusion	compressed	extensive effusion	hypertrophied, slight thickening of valves of left side	.....	healthy
83. Eliz. Watson, æt. 30, died comatose	hard	healthy	crepitant, gorged, œdematosus	healthy	natural	.....	healthy

Liver.	Intestines.	Stomach.	Spleen.	Pancreas.	Aorta.	Brain.	Uterus.	Bile.
healthy	.....	.....	.....	.....	.....	serous effusion under arachnoid.	.....	.....
light yellow, firm, & not fatty	old ulceration in both large and small	.....	.....	.....	.....	serous effusion	ovaries with small cysts.	.....
very healthy	mucous membrane pale, mucous glands large	.....	healthy	healthy	.....	arachnoid opaque, serous effusion.	.....	.....
healthy, with slight peritoneal opacity	healthy	.....	healthy	healthy.	.....	.....	.....	.....
very healthy	.....	.....	very soft.	.....	.....	.....	.....	.....
congested, & slightly granulated	healthy	.....	natural	.....	dilated, slightly atheromatous	.....	.....	thin.
healthy	healthy	mucous membrane discoloured	large and hard	healthy	greatly enlarged	clot in right thalamus.	.....	.....
healthy	pale	.....	large and soft.	.....	.....	.....	.....	.....
slightly nutmeg	loaded with watery bilious dejections	mucous membrane red	soft	healthy	slight atheroma	soft and flaccid.	.....	.....
pale, small, indurated	speckled grey	mucous membrane red in patches	large, firm	healthy	.....	.....	.....	healthy.
.....	with watery faeces	mucous membrane thickened.	.....	.....	.....	.....	.....	.....
mottled, granulated	mucous membrane of large, granulated, and ulcerated	.....	lacerable	.....	.....	slight effusion under arachnoid.	.....	.....
healthy	loaded with watery secretion, speckled grey	pale, but thick and granulated	rather soft	healthy	.....	arachnoid opaque, serous effusion, brain flaccid.	.....	.....
large, and uneven on surface	oedematous, mucous membrane grey	.....	small	firm	.....	.....	.....	good.
rather granulated, from irregular congestion	.....	.....	large	firm	.....	.....	.....	light-coloured.
healthy	.....	.....	.....	.....	.....	injected, arachnoid opaque.	.....	.....

CASE.	Kidney.	Pleura.	Lung.	Pericardium.	Heart.	Cavity of Abdomen.	Peritoneum.
84. W. Broom, æt. 17	hard	adherent universally	fleshy œdema, bronchial mucus	.....	great hyper- trophy of left side, aortal opening slightly narrowed	.....	.....
85. Mary Taylor, æt. 48	soft	adherent partially	œdematous	.....	aortal valves diseased	.....	omental adhesions
86. G. Mortlock, æt. 33, died com- atose, with calculus	hard, pale	.....	emphyse- matous	.....	slight hypertrophy	.....	slight viscid effusion
87. W. Lawrence, æt. 43	hard, not contracted	old adhesion on both sides, and effusion	œdematous and compressed	natural	small	effusion	grey
88. Mary Ann An- draws, æt. 33, sunk exhausted with diarrhoea	soft	effusion of serum	compressed	.....	healthy	three pints of serum	healthy
89. Sarah Boxall, æt. 41	small, contracted	.....	œdematous	serous effusion	dilatation and hypertrophy general	.....	.....
90. Joseph Viner, æt. 53, died of pericarditis	contracted	pint of serum	slight œdema	effusion of fibrin	large	.....	.....
91. Samuel Marns, æt. 30	large, firm	slight adhesion, with effusion	œdematous	serous effusion	hypertrophy, aortal valves thick, and mitral diseased	.....	.....
92. John Wright, æt. 48, died epileptic with coma	hard	soft adhesions	œdematous	adherent	healthy	.....	.....
93. Edw. Arnott, æt. 43, died comatose	large, hard	serous effusion	bronchitis	opaque	hypertrophy, and old adhesions	three pints of clear serum	.....
94. Edw. Briggs, æt. 56, died with coma & convulsions	large, firm, calculus in bladder	.....	œdematous and apoplectic	.....	hypertrophy and dilatation, substance soft	.....	.....
95. John Jones, æt. 38	large, plump	old adhesion and recent inflammation	bronchitis and con- solidation	.....	large and firm	.....	.....
96. Edw. Callow, æt. 15	small, hard	.....	chronic pneumonia	.....	hypertrophy	.....	.....
97. Benj. Fielder, æt. 45	white far advanced	.....	.....	.....	curtain of mitral valve thick	.....	.....
98. Caroline James, æt. 17	large, smooth, white	partial old and recent inflammation of left	.....	slight serous effusion	healthy	abundant effusion	healthy
99. Joseph Dale, æt. 28	large, mottled	effusion, and recent lymph	healthy, slightly compressed	fluid, with lymph	healthy	abundant effusion, with lymph	.....
100. J. Somerville, æt. 50	contracted	very slight old adhesion, and effusion	œdematous	.....	healthy and large	.....	healthy

Liver.	Intestines.	Stomach.	Spleen.	Pancreas.	Aorta.	Brain.	Uterus.	Bile.
healthy	œdematosus	mucous membrane injected	fleshy	firm	.....	membranes opaque, slight serous effusion, brain slightly injected	.....	viscid dark green.
rather large	.....	.....	healthy	healthy	large, and much diseased	serous effusion, arachnoid slightly opaque	diseased, scirrhouss.	
healthy	.....	.....	fleshy	healthy	.....	effusion in pia mater and ventricles.		
healthy	.....	.....	healthy	.....	.....	not examined	.....	fluid bile.
healthy	œdematosus, old ulcer in cæcum	.....	large and fleshy	small	.....	.....	.....	watery, gall-stones.
rather granulated and large	.....	.....	healthy	healthy	.....	dura mater a little thickened, slight effusion in pia mater, brain marbled, small cells	.....	watery, gall-stones.
congested	mucous membrane coarse and grey	.....	healthy	.....	.....	.....	.....	healthy.
small, and rounded	.....	large	healthy	healthy	healthy	much effusion in the membranes, arachnoid clouded	.....	dark, and viscid.
slightly granulated	.....	.....	soft	.....	atheromatous deposit	membranes opaque, and effusion	.....	dark, and viscid.
congested	.....	.....	large	healthy	.....	.....	.....	ropy.
dark colour	.....	.....	large	.....	slight atheromatous deposit	soft and vascular, some effusion of serum	.....	dark, and viscid.
large, and granulated	.....	.....	granulated.	.....	.....	.....	.....
.....	.....	mucous member granular	.....	.....	.....	fluid in pia matter.	.....
firm, and granulated.	.....	.....	.....	.....	.....	.....	.....
fatty	large intestines, follicles enlarged	healthy	soft, and mottled	.....	.....	.....	very small	thin, saffron coloured.
granulated, with structural disease	.....	.....	large, and soft	large, and firm.	.....	.....	.....
slightly indurated	healthy	.....	healthy	healthy	arch dilated	much chronic disease of membranes & substance.	.....

From the analysis of the foregoing tabular view, many curious facts respecting the derangement of different organs connected with granular kidneys are brought to light; for it is most probable, that a hundred cases of one disease, collected at different times and with no particular object in view, will yield results which will, in the main, be borne out by the comparison of any other equal number of cases of the same disease. The first circumstance which strikes the mind, is the extent and frequency to which the derangement of one organ is connected with the derangement of several others: yet we are not at liberty to assume, that the disease of the kidney has been the primary cause on which the disease of the rest depended. It may be, that some other organ has first suffered, and that the kidneys, together with the rest, have become involved. I confess I am inclined to believe that the kidney is the chief promoter of the other derangements. The only organ, except the kidney, which I think, on taking a review of the history of this disease, might probably act as the primary cause, is the skin; and this is so closely connected in its derangements with the kidney, that the relations of their lesions, as regards cause and effect, become equivocal. It is, however, to be held in mind, that the secretion of the skin is quite as much interrupted, for a time, in many other states of disease, without the albumen making its appearance in the urine; in diabetes, for instance, in jaundice, and in certain stages of various inflammatory and febrile diseases. Moreover, it is not a fact, that in every case, or during the whole course of the disease under consideration, the skin is not perspirable: on the contrary, we often establish, for many months, the secretion of the skin, while the urine remains albuminous; as we occasionally succeed in doing in cases of diabetes, without essentially changing the character of the urine. In almost every case, the first impression which brings on the anasarca is suppression of perspiration; but it is almost as constantly the fact, that the kidneys have undergone some previous irritation, and very likely that the albuminous urine, in most cases, existed previously to the occurrence of those symptoms by which it has been recognised, more particularly previously to the anasarca.

The changes effected in the blood by the long continuance

of this disease are quite sufficient to account for most extensive derangement. The extraordinary manner in which the blood becomes impoverished and robbed every successive day of a portion of its most nutritive parts must, of itself, be considered a most efficient cause of predisposition to disease; and the fact, established now by a great accumulation of evidence, and supported by the names of Prout and Bostock, of Christison, Gregory, Babington, and others, that the chemical qualities of the blood are so far changed, that urea is to be detected in that fluid, or, at all events, certain constituents scarcely distinguishable from it, is still further to be viewed as a source of disease springing immediately out of the defective action of the kidney. On the other hand, it cannot be denied, that if the function of the skin is suddenly interrupted, derangements are likely to arise in various organs; and as, in many instances, the kidney most evidently receives a very injurious impression from the suppression of the perspiration; so other organs may be in turn affected through the same medium. I do not therefore by any means assert, that all the lesions which the foregoing table details, flow as a consequence from the kidney alone; but that they are such derangements as generally co-exist with this peculiar disease of that organ.

The principal lesions display themselves in the circulating and respiratory systems, and in the serous membranes. The heart and the lungs, the pleura, the arachnoid and the peritoneum, have, in a large majority of cases, shewn marks of disease; while the liver, the spleen, the pancreas, and even the intestines, have frequently been, to all appearance, in a state of health, and have comparatively seldom given proof, by their structure, of any peculiarly diseased action. Of all the membranes, the pleura has decidedly been most often diseased; but that disease has, in forty cases, consisted of old adhesion; which, though it might have been connected with the first attack of renal disease, or might have taken place at some later period, in connection with that affection, may probably only mark the liability of the individual to be affected by atmospheric changes, and may have been the result of some casual inflammatory attack. At all events, the twenty-six cases in which the pleura was apparently healthy, and in three of which its freedom from disease is distinctly stated, prove, that however general a

limited inflammatory action of the pleura may have been, it forms no essential part of the disease. That the pleura is, however, liable to inflammatory action, in a large proportion of these cases, may be inferred from the sixteen instances of recent inflammation; while the serous effusion, which has occurred in forty-one cases, has been connected with that general loss of balance between the actions of the exhalents and the absorbents which is obvious in every part of the system.

The same tendency to disease which is manifest in the pleura, shews itself, though in a less degree, in other serous membranes. In the pericardium, we have found six instances of old adhesion, eight of recent inflammation, and twenty-three of serous accumulation; and in the peritoneum, ten instances of old adhesion, twelve or thirteen of well-marked, recent, and often most acute inflammatory action; and twenty-three of the effusion of clear serum, in three of which a false membrane had been formed by chronic action: and again, looking to the arachnoid, we find that membrane rendered opaque, probably by a more or less severe inflammatory action, in thirteen cases; while well-marked serous accumulation had taken place beneath it in twenty-nine cases, and had partially distended the ventricles in six.

The deviations from health in the heart are well worthy of observation: they have been so frequent, as to shew a most important and intimate connection with the disease of which we are treating; while at the same time there have been twenty-seven cases in which no disease could be detected; and six others, which, from not having been noted, lead to the belief that no important deviation from the normal state existed. The obvious structural changes in the heart have consisted chiefly of hypertrophy with or without valvular disease: and what is most striking, out of fifty-two cases of hypertrophy, no valvular disease whatsoever could be detected in thirty-four: but in eleven of these thirty-four, more or less disease existed in the coats of the aorta; still, however, leaving twenty-two without any probable organic cause for the marked hypertrophy generally affecting the left ventricle. This naturally leads us to look for some less local cause, for the unusual efforts to which the heart has been impelled: and the two most ready solutions appear to be, either that the altered quality of the

blood affords irregular and unwonted stimulus to the organ immediately; or, that it so affects the minute and capillary circulation, as to render greater action necessary to force the blood through the distant sub-divisions of the vascular system. The valves chiefly affected have been the semilunar valves of the aorta and the mitral; and in three cases, the tricuspid has been somewhat deranged. In three cases, likewise, the disease of the valves has been unattended by any hypertrophy of the heart.

It is observable, that the hypertrophy of the heart seems, in some degree, to have kept pace with the advance of disease in the kidneys; for in by far the majority of cases, where the muscular power of the heart was increased, the hardness and contraction of the kidney bespoke the probability of a long continuance of the disease. Six cases are noted, in which the heart was soft and flaccid, and four in which it was unusually small; and in most of these, though not in all, the disease of the kidney had not proceeded to the state of contraction and hardness.

The principal diseases of the lungs have been oedema and bronchitis, frequently attended by an emphysematous condition of certain portions. Oedema has occurred in thirty-one cases; and it is very commonly the immediate cause of dissolution, or of the increased distress towards the approaching termination of the chronic form of the disease. In six cases, recent, and in five old, traces of pneumonia were found; while the embarrassment to the circulation, caused by these various diseases of the heart and lungs, had occasionally given rise to the effusion of blood into the tissue of the lungs, in the form which is now known by the term of pulmonic apoplexy. The instances in which phthisis, or any form of scrofulous or tuberculous disease, has been connected with the renal affection, have been decidedly rare; so that in only four cases has recent phthisis developed itself: and what is somewhat remarkable, in more than double that number the disease seems to have made a certain inroad upon the upper lobes of the lungs, and then to have sunk into a state of quiescence, or entirely subsided: from which we should perhaps be inclined to infer, that so far from these diseases being associated, the condition of the body in this form of renal disease is unfavourable to the

existence of phthisis, or that it is certainly not peculiarly apt to occur in tuberculous constitutions.

With regard to the liver and the abdominal viscera generally, as compared with the heart and lungs, a very great immunity from structural disease is to be observed; a fact the more remarkable, as the habits of intemperance with which the renal disease is so frequently connected are those which might be expected to act very directly on the liver and digestive organs: indeed, to this day, the impression is so strong, as to the injurious effects of stimulants being manifested chiefly on the liver, that the majority of practitioners no sooner see the bloated countenance of anasarca connected with the history of intemperance, than they proceed to consider in what way the depraved action of the liver is to be corrected, and its morbid changes retarded. Looking to the tables before us, a very different conclusion forces itself upon our mind, as to the condition of the liver in general anasarca, and in that state of cachexia which often attends upon intemperate habits. We here find, in thirty-one cases, the liver distinctly stated to be healthy; and in nine other cases, so free from all suspicion of deranged action, as to be pointed out as remarkable specimens of the healthy organ; thus making forty in the hundred free from disease. In thirty-two cases, any deviation from the natural appearance was exceedingly slight; and was, in a large proportion of them, nothing more than that mottled state which is derived from the irregular distribution of blood throughout the texture—a condition very frequently observed, where the circulation through the chest is obstructed. The instances of confirmed diseased structure did not amount to above eighteen. There seemed to be no marked connection between the condition of the kidney and of the liver; for nearly one half of those cases which were stated to be remarkably healthy were coupled with the hard and probably most-advanced form of the disease, while the other half occurred in cases apparently less advanced; and the more severe cases of hepatic derangement accompanied every variety of the disease in the kidney. The only two instances of fatty degeneration in the liver were in cases where the kidney was soft, smooth, and white; but in another, where the liver was somewhat fatty, the kidney was hard, rough, and lobulated.

The stomach seems, in many cases, to have suffered from the excessive use of stimulants. In eighteen cases, the effects of irritation on the mucous membrane has been recorded: and as this is an organ which is more likely to pass unnoticed than the liver and some others, it is probable that this number would have been increased if its condition had been more constantly or accurately examined and noted.

The spleen and the pancreas have very generally been mentioned as healthy.

The intestines have, in several cases, though not very generally, shewn marked signs of disease. In about nineteen, the small intestines have been irritated in some portions of their courses—in a few of these, ulceration has taken place; and in seven cases the colon or cæcum has been diseased; but several of these have occurred in conjunction with tubercles in the lungs, and have therefore been scarcely ascribable to the peculiar circumstances of this disease.

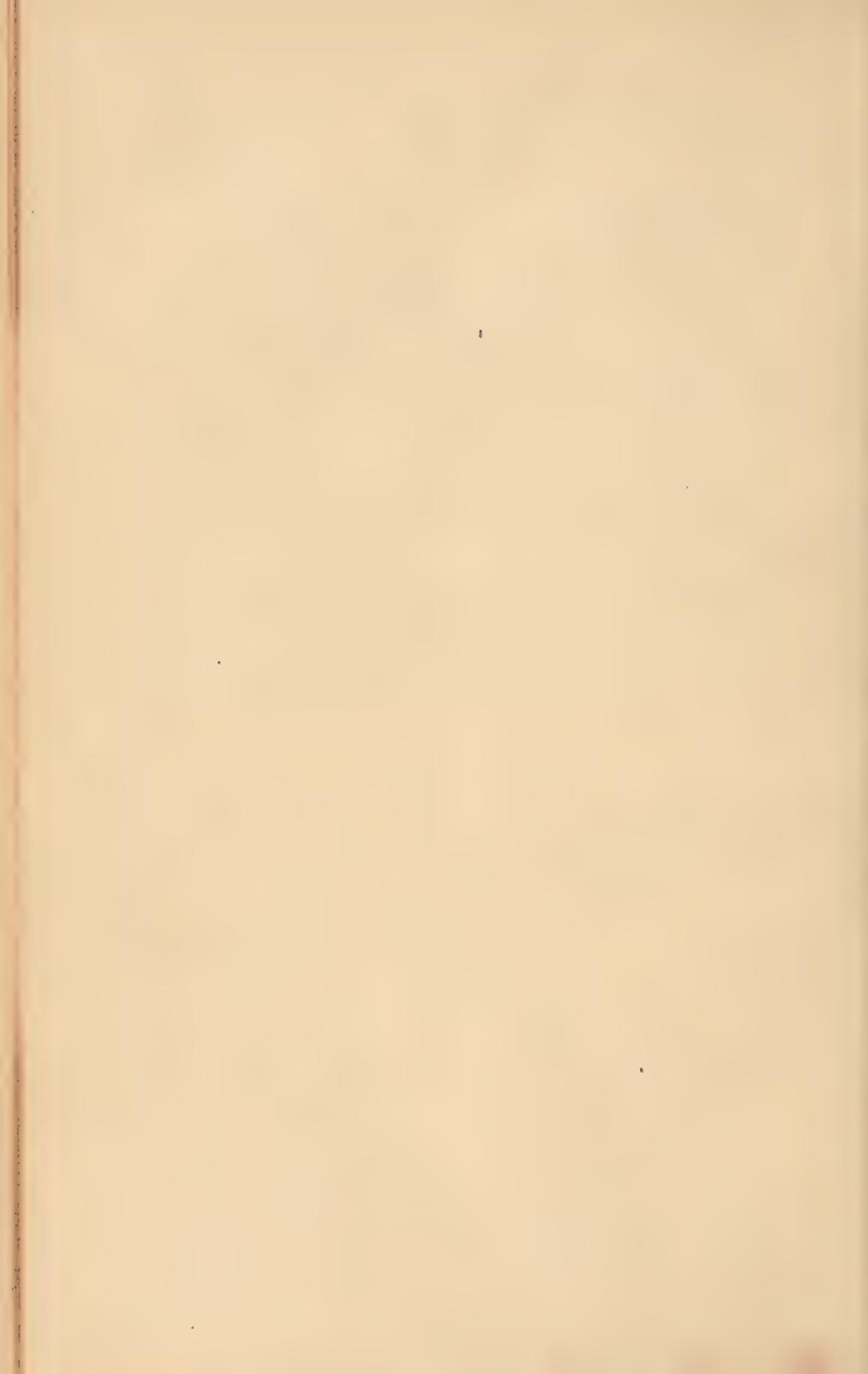
The diseases in the substance of the brain itself have chiefly consisted of that unequal distribution of blood which is apt to produce a mottled appearance when the medullary substance is exposed in slices, and which is frequently attendant on convulsive or apoplectic seizures. In some cases, the brain has been exsanguine; and in a few, the results of such lesions as the rupture of vessels may induce, have been observed.

The foregoing table likewise affords an instructive average of the immediate causes of death in this disease. I have been able to trace the circumstances connected with the conclusion of life in seventy cases; and find, that no less than thirty out of these seventy have died of well-marked symptoms of cerebral derangements, noted under the titles of 'apoplexy,' 'coma,' 'convulsion,' and 'epilepsy.' Eight others have died suddenly. In eight cases, the obstructed condition of the lungs has been the immediate cause of death; and in three, the effusion into the chest has hastened the dissolution. Next to head affections, the most prevalent diseases have been inflammatory attacks in the serous membranes; amongst which are five well-marked cases of peritonitis, three of pericarditis, one or two of pleuritis. Diarrhoea and other exhausting diseases have carried off several; and in every case, except two or three, the death appears to have been the result, not

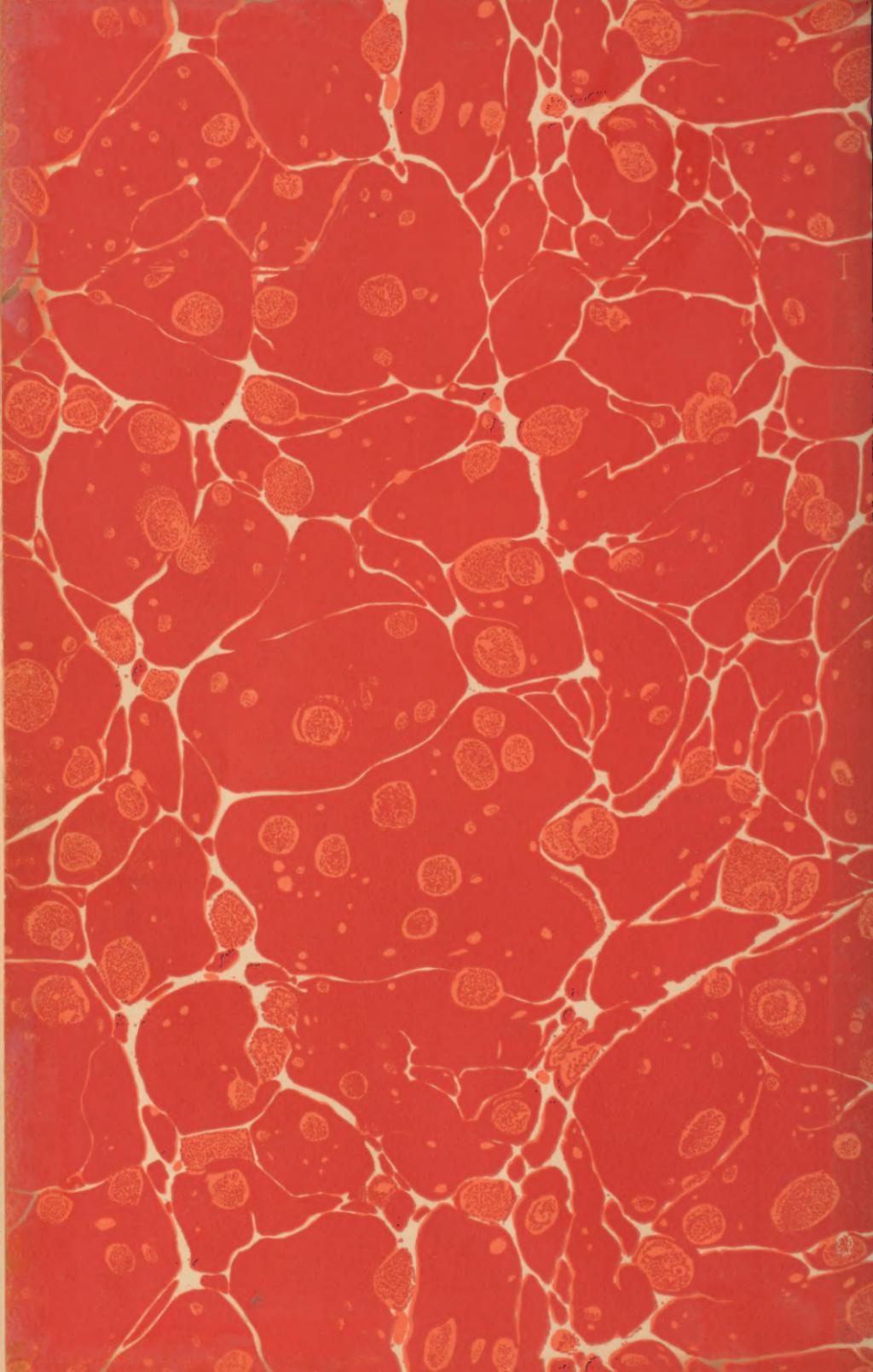
of casual disease, but of such events as may be said strictly to belong to the condition of the kidney of which we have been treating.

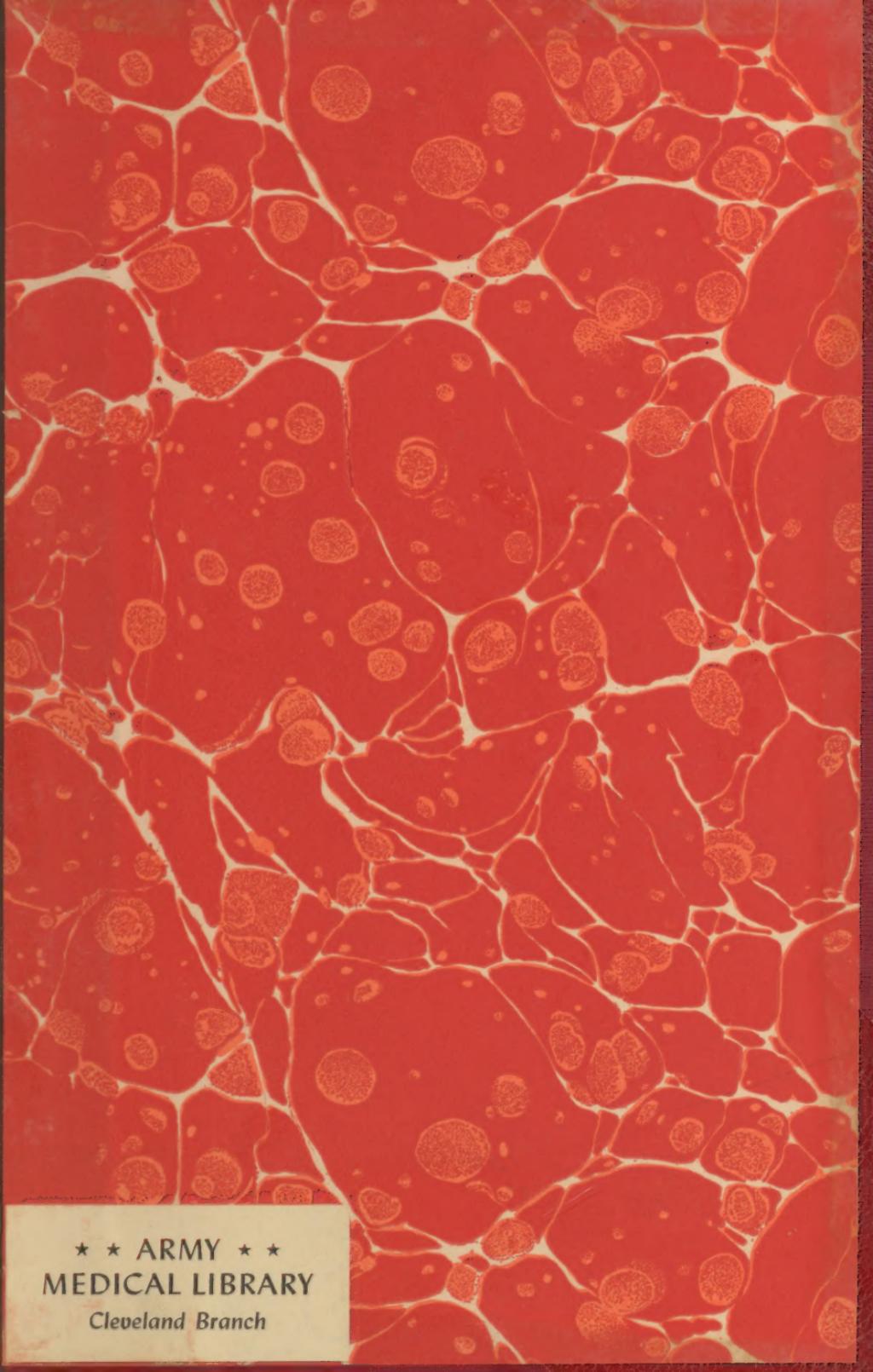
One other point suggests itself, as capable of some illustration from the foregoing table—the period of life in which most have fallen a sacrifice to this disease, and the probable degree to which it shortens life. In seventy-four cases, the age has been recorded; and of these, four only have survived beyond their sixtieth year; thirteen have passed their fiftieth year; but few of them have lived to fifty-five: twenty-one have died between forty and fifty; sixteen have passed thirty years; and nineteen have died before they had arrived at their thirtieth year: and if we take those who have died in their forty-fifth year and below that age, we find that the large proportion of fifty out of seventy-four have sunk before the meridian of life. The youngest, whose age is given, is only eight; and there is one advanced to seventy-three: shewing, therefore, that neither youth nor age is exempt from this disease, but that it has cut off the greater part of its victims before the middle period has been attained.











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